

THE *Soybean Digest*

OFFICIAL PUBLICATION • AMERICAN SOYBEAN ASSOCIATION

Exhibit of American Soybeans
at Osaka Trade Fair



MAY • 1956

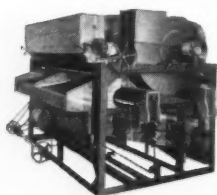
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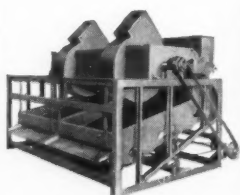
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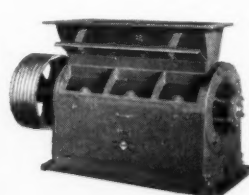
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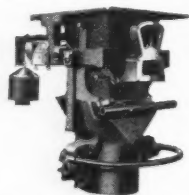
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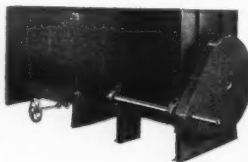
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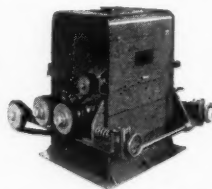
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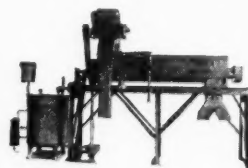
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THE Soybean Digest

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HUDSON, IOWA

Vol. 16

May, 1956

No. 7

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THE SOYBEAN DIGEST

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Objectives of the American Soybean As-
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all persons interested in the production,
distribution and utilization of soybeans;
the collection and dissemination of the best
available information relating to both the
practical and scientific phases of the prob-
lems of increased yields coupled with les-
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EDITOR'S DESK

By GEO. M. STRAYER

PRICING POLICIES PAID OFF

As this is written soybeans at Chicago are selling well above \$3 per bushel. Soybean oil meal prices have strengthened, and oil has hit the highest levels in recent months.

Never before in history has soybean oil meal disappeared at such fabulous rates. Soybeans have disappeared into the cavernous jaws of processing plants at a rate approximating 25 million bushels per month—and the oil and the meal have moved out just as rapidly. Even a year ago there were very few who would believe that meal or beans could disappear at such rates without glutting the markets.

We have relatively high prices on soybeans today. We have them because prices of soybeans, meal and oil were such at harvest season as to stimulate buying of soybeans and usage of meal and oil. Crushing started out at a heavy rate, buying for export was heavy, and competition set in.

I cannot help pointing out again that proper pricing policies—especially support levels—are at least partially responsible for today's very favorable levels. We can produce soybeans as efficiently and as economically as any country in the world today. We have the soil, the climate, the machinery, the know-how, the improved varieties and the high oil content which make a desirable product. We have been smart enough to price our product at levels at which buyers were interested both at home and abroad. We have built markets few people thought possible. In doing so we have built competition for soybean supplies—and today we have relatively high-priced beans because of that competition.

RESULTS HOPED FROM STUDY OF CARGOES

Study of the arrivals of cargoes of U. S. soybeans in European ports, described on this page in the March and April issues, is now completed. We will await with a great deal of interest the report of the joint team, made up of representatives from the surveyors (sampling and grading agencies) in European ports and representatives from the U. S. Department of Agriculture.

For a period of years—since about 1949—I have been told by European buyers that our general quality and our grades were not satisfactory. There have been accusations that arrival analysis reports and the grading certificates issued at loading in the United States did not correspond.

This study, made of both sampling and grading methods, and conducted on actual export cargoes

as loaded here at home and as unloaded in European ports, should determine where the differences lie. Do our sampling methods need revision? Are our grades accurate? Have the sampling methods used on arrivals been representative of entire shipments? Have the grade determinations made on that side been accurate?

We need to know. When the results of this study are announced we should at least know where our differences originate. And perhaps we'll find a solution which will be fair to buyer and seller. We must, if we are to continue to hold the European market.

PROMOTION NEEDED IN EUROPE, TOO

Fortunately soybeans have never been marketed under Public Law 480. There have been no surpluses. Let us hope that situation continues.

Other commodities have been marketed under Public Law 480 in Europe and the Orient. By law a portion of the local currencies accepted in payment must be used for the promotion of markets for agricultural commodities. Application is not limited to the commodities sold under P. L. 480, but can be applied to all agricultural products.

The United States has never, until recent years, been an exporter of soybean products. But the potential market for them is tremendous. In recent months, since soybean oil became eligible for export under P. L. 480, large tonnages have been sold. Present prices for soybeans reflect the higher oil and meal prices received by processors.

The Japanese Market Development Project is now activated and under way. Preliminary discussions have taken place on the possibilities of a similar project for the European countries. It would be designed to promote the sale of soybean oil, soy flour, lecithin, soybean oil meal, soy flakes and soybeans. Sales would be for dollars.

In the world economy of today markets must be created and promoted. Up to this time we in the United States have done a very poor promotional job on agricultural commodities. It is time we become active and alive to opportunities. The creation of new demands, the expansion of present markets, and the creation of new ones can result only in greater prosperity for every grower of soybeans and every processor of soybeans in the United States. P. L. 480 funds are available—we suggest their use on soybean product promotion in Europe.

COOPERATIVE PROJECT UNDER WAY Favorable markets exist when a commodity changes hands on a basis that is profitable to both buyer and seller. Trade continues only so long as such conditions exist. Price, quality and terms of sale are all factors.

Japan is our largest export customer and will be so long as it is profitable for her, as well as for us, to continue trading.

Establishment of the Japanese-American Soybean Institute, with headquarters in Tokyo, with membership from both Japanese and American sides, has now been completed and a program of work outlined for 1 year starting Apr. 1, 1956. Participants include the American Soybean Association, the Japan Association of Oil and Fat Manufacturers, Nippon Shoyu Association, Japan Miso Industry Association, Japan Tofu Association, and the Oil and Fat Importers and Exporters Association. Ersel Walley, member of the ASA board of directors and former president of ASA, who has been in Japan since mid-March, completed the arrangements with the Japanese trade groups. A managing director has been employed, and an office was established as of May 1.

Financing of the 1-year study of continuation and expansion of the Japanese market for U. S. soybeans will come from three sources. Funds paid to the U. S. government for agricultural commodities sold under Public Law 480, and in

Japanese yen, will be available up to \$75,000. The cooperating Japanese trade groups named above will supply, in yen and in service, \$7,500. The American Soybean Association will supply dollar expenses anticipated to total about \$10,000.

The Japanese market for soybeans is a different one than that of our own country, or that of European countries. There are many things we need to know about deliveries of soybeans from competitive suppliers. Also about the actual arrivals of our own soybeans in Japan, especially on those cargoes which are broken into many small lots upon arrival at Japanese ports.

This Market Development Project, of which the American Soybean Association has assumed responsibility, should give us many of the answers during the next year. A comprehensive research study, to be done by a qualified and competent agency and under our direction, should place us in position to compete in the Japanese market as we have never been able to do previously. Can you think of a better way to spend Japanese yen, owned by the U. S. government, and paid to it in the purchase of U. S. surplus agricultural commodities, than outlined above? When the law requires that a percentage of such funds be spent on the promotion of markets for American agricultural commodities? And when the Japanese market offers a potential of two or three times present exports.

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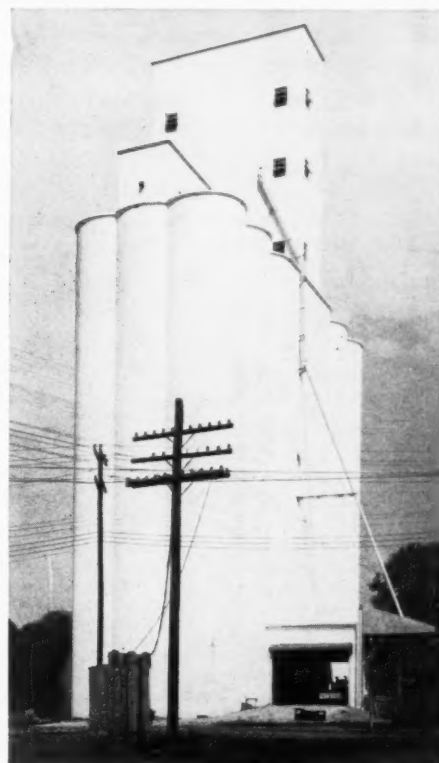
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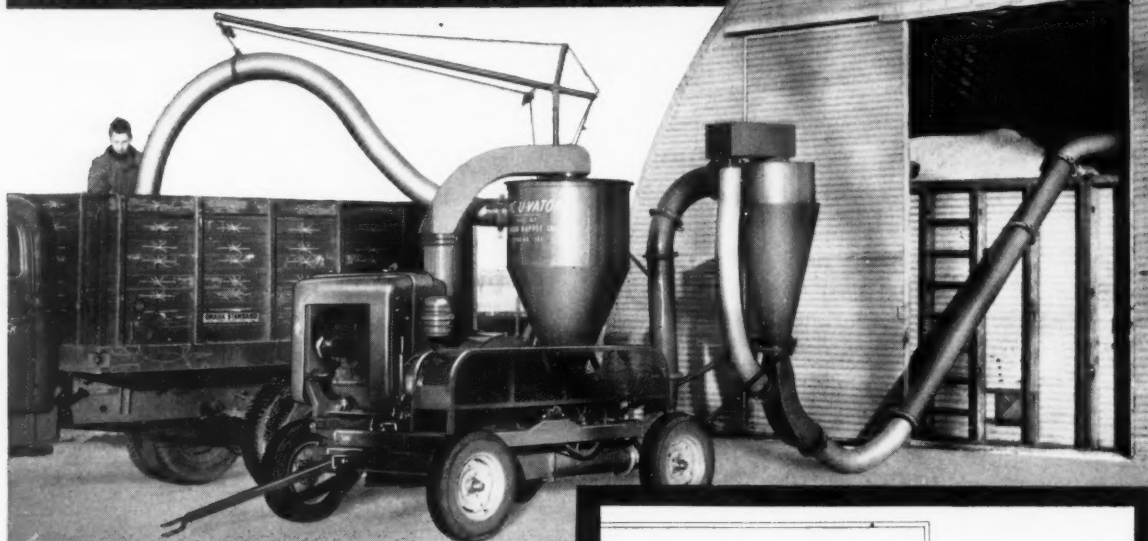
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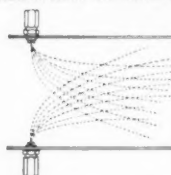
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SOYBEAN DIGEST



OSAKA FAIR. At left, Ruth Peterson, USA dairy queen, and Ersel Walley, past president of the American Soybean Association, at breakfast honoring the queen. Below, the Japan International Trade Fair at Osaka, where thousands of visitors visited the U. S. soybean exhibit daily.



ASA Honors Dairy Queen During Japan Fair

IT IS A SMALL world when the USA plays host to a Minnesota girl in Japan. But that is exactly what happened during the Osaka Trade Fair in Japan in April.

Miss Ruth Peterson, the American dairy queen, was in Japan on a good will tour during the Fair at which the American Soybean Association had a large exhibit of American soybeans and soybean products.

To honor Miss Peterson the representatives of the American Soybean Association entertained a large breakfast party at the New Osaka Hotel. Present were prominent representatives of the U. S. Department of Agriculture, Japanese soybean and dairy groups, and sponsors of 4-H Club work in Japan. Jim Hill of Radio-TV Station WCCO, Minneapolis, presented Miss Peterson to the group.

Ersel Walley, past president of

ASA, in Japan as a special representative of the Association, pointed out that Minnesota, Miss Peterson's home state, stands No. 2 in the United States in soybean production. He also complimented her on the outstanding job she had done in Japan as an ambassador of good will, and called her a "truly fine representative of our American 4-H Club program."

Walley, of Fort Wayne, Ind., and Marion Hartz of Stuttgart, Ark., were in charge of the U. S. soybean exhibit, which was sponsored jointly by ASA and the U. S. Department of Agriculture at the Osaka Fair in April.

The exhibit attracted wide attention in Japan, with 12,000 to 15,000 visitors a day reported. It featured the availability of American soybeans for export, the higher oil content as compared with shipments of

soybeans from other parts of the world, and demonstrated the place of soybean food products in supplementing the high rice diet of the Japanese people.

Walley while he was in Japan was also active in starting work on the market development project on soybeans for Japan to be carried on jointly by the U. S. Department of Agriculture and ASA. Purpose is to assemble the needed information on requirement of the Japanese market for soybeans so that exports of U. S. soybeans may more nearly fill those needs, and thus expand the Japanese market for American soybeans.

The project is being financed by funds from P. L. 480 sources, from Japanese trade association sources, and from ASA.

The cover picture this month shows the American Soybean exhibit in charge of Walley and Hartz.

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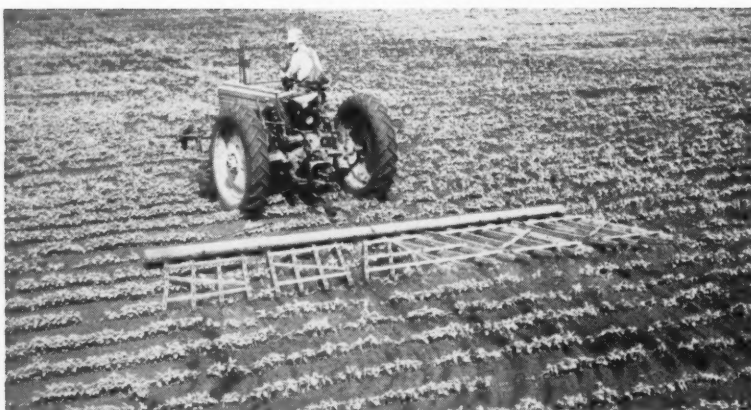
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EARLY CULTIVATING is generally liked by soybean growers. A speedy outfit like the spiketooth harrow or rotary hoe covers a lot of ground in a short time.

Questions answered include
seedbed preparation,
planting methods,
date of planting,
amount of seed,
width of rows,
cultivation,
hand weeding, and
chemical control

Soybean Growers Tell How They Control Weeds

**Compare your practices with those of
your neighbors across the nation**

By J. W. CALLAND

Managing Director, National Soybean Crop
Improvement Council

IN 1955 more than 2,400 soybean growers from 17 of the principal soybean states told about the practices they use to control weeds in their soybean fields.

The National Soybean Crop Improvement Council wanted to learn from the farmers themselves just what steps they were taking to control weeds, the state experiment stations wanted to know just how well their control recommendations were being followed, so together they enlisted the help of the extension people and the county agricultural agents to find out.

The questions answered by these growers covered seedbed preparation, planting methods, date of planting, amount of seed, width of rows, cultivation, hand weeding, principal weeds, chemical control, effectiveness of their control operations, and the estimated loss in yield due to weeds.

The average grower plants more than one variety, 13% planted three or more, and they almost universally plow the field that is going into soybeans. About 85% of them plow the field early, let a crop of weeds start and kill them with a shallow cultivation just before planting. This is a standard recommendation of the experiment stations and apparently

most farmers find it to be a good one.

Not more than 8% of the growers plant their soybeans solid. All the rest plant in rows. There are, of course, some who plant both ways. More than 60 pounds of seed per acre is used by 60 to 70% of the farmers reporting. They believe that extra seed helps the soybeans emerge to a good stand. They want plenty of plants, then if the stand is reduced 10% or so by weed control operations, there still will be enough for top yields. Most of those planting solid prefer 2 bushels of seed per acre.

Northerners Plant in May

Growers in the North Central States plant almost no soybeans in April, 7% plant before May 10, 40% between the 10th and 20th, 37% the last week in May, 16% in June, and a very few in July. Soybeans are planted both earlier and later in the Southern and Central Atlantic Coast States, 8% in April, 62% in May and 30% in June. Conditions frequently require later planting dates in the South. Many fields are planted in the 10-day period each way from June 1. In many cases soybeans are a second crop on the field following vegetable or grain crops.

Between 80 and 90% of all growers say they break up a hard crust if rain causes one to form before the beans emerge. About three-fourths of

them prefer the rotary hoe for this operation. The next choice is the spiketooth harrow. Fifteen to twenty percent apparently let the beans get up the best way they can if a crust forms on the field.

Soybean growers generally like to do their early cultivations with tools like the rotary hoe, the spiketooth harrow, the cultipacker, or weeder, because they can travel 10 to 12 miles an hour with these and cover a lot of acres in a short time. Less than one-third of the growers do any cultivating before the beans emerge, but those who do, think that this early cultivation is important in weed control. They say most of the weeds sprout in the top one-half inch of soil and the secret of a clean field is never to let weeds get started. Cultivate them while they are still in the "white."

Eighty-eight percent of the northern growers and 70% of those in the South cultivate their soybeans one or more times with one or another of these rapid cultivating tools such as the rotary hoe after the beans emerge. Between 80 and 90% prefer the rotary hoe for these fast cultivations. About 40% of the growers give their beans but one such cultivation, 40% give two, and the balance three or more. Some 30% of the southern growers and about 12% of the north central growers depend entirely on the regular cultivator for weed con-

trol and do not use any of the quick, early weed control operations.

Fifteen to twenty percent of all the growers use the regular cultivator only once. These are mainly the ones who already have given the field one or more rapid cultivations. Fifty to seventy percent use the regular cultivator twice and some 15% use it three or more times.

Sixty-five percent of the farmers hand-hoe or pull large weeds from the field if they come in after cultivating is finished.

More than three-fourths of all these growers feel that their control practices keep their soybean fields reasonably free from weeds provided they are not hindered too severely by the weather. Yet they fully realize the damaging effect of weeds on soybean yields. Frequently a part of this damage is done before the weeds are destroyed. Then the cultivator can't get the weeds in the rows, and each weed steals moisture, growing space, and nutrients from the beans.

Fifty-four percent of northern growers and 70% of the southern growers say that weeds do reduce soybean yields. Seventy percent of the southern growers and 75% of those in the North who say that weeds reduce yields think this reduction runs from 5% to 20% loss. The balance think the loss may be even greater than 20%.

Few Use Chemicals

Only from 2 to 4% of these growers have tried any kind of chemical weed control on their soybeans. Not more than one-half of the growers who have tried chemical control report favorable results. About one-fourth of the trials have been with pre-emerge, the balance post-emergence treatments, mostly 2,4-D. Since only a few experiment stations are recommending chemical weed control for soybeans, it is not strange that so few growers are trying it.

The most troublesome weeds as listed by the southern growers are pigweed, Johnsongrass, cocklebur, morning glory, coffee weed, horseweed, ragweed, indigo weed, and grasses and smartweed in this order. North central state growers also put pigweed in first place, then annual grasses including common foxtail, butterprint, cocklebur, smartweed, ragweed, jimsonweed, morning glory, and thistles. Five percent of the growers reporting in Illinois and Missouri mentioned giant foxtail.

A 10% yield reduction due to weeds means a loss of \$75 million to soybean growers. When you add to this the cost of labor, equipment and time expended on control operations, the cost is probably doubled. It would be a serious mistake to think that the problem of keeping weeds out of farm crops has been licked. It still is a tough fight that must be waged each year.



"Competition gives me more for my money

—my refrigerator is a good example!"

Inquiring Reporter: There are bills in Congress that would give *regulated* forms of transportation, such as railroads and some trucks and barges, more freedom to price their services in competition with each other—and with unregulated trucks and barges, too. What do *you* think?

Housewife: Well, what I want to know is — will competition in transportation benefit me? Now when I bought my refrigerator, three different stores competed for my business — and I got a mighty good buy!

Inquiring Reporter: According to a Cabinet Committee appointed by the President, if all forms of transportation were allowed greater freedom to compete with one another in rates, it would mean savings for everyone.

Housewife: I thought so. I remember reading that railroads are often required to set their rates higher than would otherwise be necessary — just to protect their competitors.

Inquiring Reporter: That's right — and the Cabinet Committee recommended that each form of transportation should be allowed to make rates related to its own costs and needs, so long as the rates are not below cost and are not discriminatory.

Housewife: Well, in that case I'm all for competitive freight rates. After all, I pay the freight on everything I buy!

For full information on this important subject, write for the booklet, "Why Not Let Competition Work?"

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Late News

Published 32 times
yearly as a service
to the soybean
industry.

Vol. 4, No. 7

Hudson, Iowa

May 6, 1956

SPRING IS LATE

Spring has been late with much below normal temperatures in most parts of the soybean belt, both north and south, and the planting season has been slow getting under way. **However, planting was making rapid progress in the Midsouth by the last of April.** Dixon Jordan, Standard Commission Co., Memphis, reported (Apr. 30) that southeast Missouri was 75% planted and some parts of Mississippi County, Ark., were also that far along. The most advanced sections of Tennessee were 75% planted. The balance of Arkansas and Mississippi were not quite that far along.

O. H. Acom, Wardell, Mo., reports early plantings are up in his area. Planting has started in northeast Oklahoma and was making rapid headway in Louisiana by May 1.

ACREAGE VERY UNCERTAIN

With soybean seeding now well under way in the South there is still great uncertainty over the final national acreage to be planted.

Two new factors introduced recently into the picture:

- 1—The rapid advance in the bean market.
- 2—The Secretary of Agriculture's announcement of \$1.25 support price on non-compliance corn.

The latter will have little effect in the South and its effect in the Cornbelt is problematical—though **an increase in corn acres and therefore a decrease in soybean acres is generally expected.**

U. S. Department of Agriculture spokesmen see the increase in corn acreage due to the price support announcement as 2 to 3 million acres, or up to the 81.6-million-acre total plantings of last year. Due to the outlook for heavier corn planting **there is a tendency by our reporters to shave the USDA Mar. 1 planting intentions report for soybeans in the Cornbelt,** though agreement is not universal. USDA observers expect the bulk of the increase in corn acres to come in the western part of the Cornbelt.

But the recent market for soybeans is undeniably very attractive and is bound to have an influence, particularly in areas where farmers are looking for an alternate to other crops.

The weather remains cold in most of the bean area, and in some places wet. And a late season in past years has meant increased bean acres. A good demand for seed is reported most places.

Canadian growers intend to plant 205,000 acres to soybeans this year, a 4% decline from 214,000 acres planted in 1955, according to the Canadian government report. But K. A. Standing, secretary-manager of the Ontario Soya-Bean Growers' Marketing Board, sees the acreage in southern Ontario as being 100% of 1955.

SUPPLIES OF SOIL MOISTURE

Subsoil moisture is below normal in many of the soybean growing areas of the North Central States. There were beneficial rains in Iowa, Illinois and northern Missouri the last of April. Accumulated soil moisture deficiencies in Iowa the past year were 10 to 14 inches. This deficiency has been alleviated to some extent by recent rains. One-third of reports to the U. S. Weather Bureau from Indiana are of shortages of soil moisture supplies in that state. Conditions remain dry west of the Missouri River and north of Oklahoma. Moisture supplies are generally good in the South and along the East Coast.



SHIFT IN VARIETIES

A large increase in yellow-coated varieties and fewer Ogdens is reported in the South. "We estimate 60% of the soybean acres in the South will be yellow," says Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark. There is considerable increase in Lee and Clark varieties in adapted areas. J. E. Johnson, Champaign, Ill., questions whether Clark may not be moving too far north.

Acreage planted to Harosoy is increasing in Northern States.

PRICE OUTLOOK

There is a growing belief in the trade that the recent advances in the soybean market are mostly speculative. And U. S. Department of Agriculture observers feel that **most of the recent upsurge in prices, except for lard, is not justified by the supply situation.** Remaining beans are in strong hands, wherever held.

Trade News Service, New York, suggests the 1955 crop may have been overestimated 7 million bushels, based on the Apr. 1 stocks report (see page 36).

DEMAND FOR MEAL

Jordan at Memphis reports that demand for protein meals has improved sharply in the past 3 weeks. But Fred Hafner, General Mills, Inc., Minneapolis, says: "The unfortunate rise in ingredient prices has had a discouraging effect on feed demand temporarily. To what extent feeders will be willing to follow the advance in feed prices is hard to say but I would imagine that **it will tend to discourage further increases in animal production.** Meanwhile soybean processing margins have deteriorated to the lowest level this crop year due to the recent bulge in soybean prices."

J. E. Johnson, Champaign, Ill., reports some small selling of new crop soybeans at \$2.40. He says: "Looks like good judgment to sell the new crop due to speculation in 1955 beans pulling the November up."

Informed sources say Denmark is increasing its imports of soybeans considerably this year. That country has been able to buy Manchurian beans at \$119 per ton recently compared to \$130 per ton for American beans.

Bolstering the fats and oils markets is a recent purchase of 25,000 metric tons of soybean salad oil by Spain for dollars with further purchases in prospect by Spain and Mediterranean countries to make up for the olive oil shortage. Negotiations are under way by the American Soybean Association for an exhibit of U. S. soybean oil at International Food Fair, Barcelona, Spain, in June.

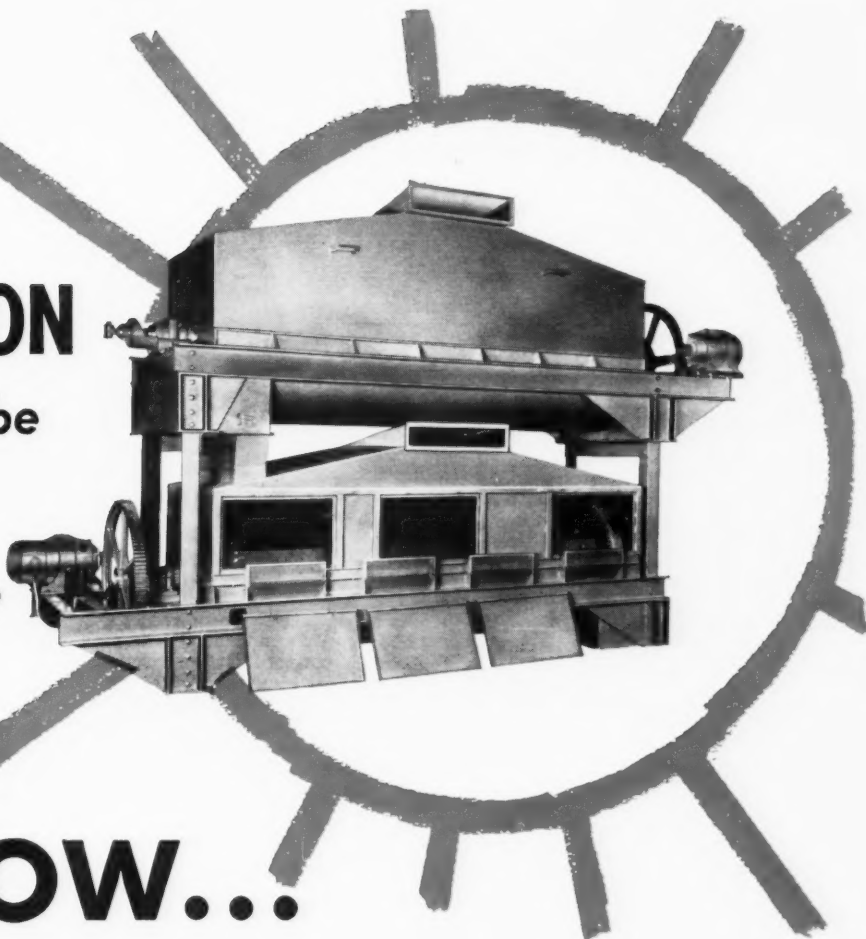
	Cash prices Apr. 27
Soybean Oil meal, Decatur, ton	57.50
Soybeans, No. 2 yellow, Chicago, bu.....	\$ 3.14
Soybean oil, crude, Decatur, lb.15 $\frac{3}{4}$

	Cash price to farmers for No. 1 soybeans Apr. 27	Price to farmers for No. 2 soybeans Apr. 27	Retail cash price for bagged soybean oil meal Apr. 27
Ill.....	\$2.95@ \$3.02	\$2.90	\$74@ \$80
Ind.....	2.96		70
Iowa.....	2.90		80
Kans.....	2.78	2.78@ 2.85	69@ 72
Minn.....	2.95		70
Mo.....	2.86@ 2.90	2.76	78.60
Ohio.....	2.98@ 2.99		
Okla.....	2.67	2.67	70
Tenn.....	2.88@ 2.90		83
Ontario.....		2.77@ 2.82	

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Need For Research On Soybean Oil Meal

PART II

By L. L. McKINNEY and J. C. COWAN

Northern Utilization Research Branch, Agricultural Research Service
U. S. Department of Agriculture, Peoria, Ill.

Amino Acids

PROTEINS are composed of some 22 different amino acids. Non-ruminant animals are unable to synthesize about one-half of these amino acids and must depend on plant sources for their supply of what we call "essential amino acids." It has been shown that each animal requires these essential amino acids at definite levels and in definite ratios to each other, at each meal, for optimum growth. Cornell workers (35) have shown that the ratio at which these amino acids are required corresponds very closely to the ratio in which they occur in the animal carcass.

Unfortunately plants do not lay down these amino acids in their proteins in the same ratio as does the animal. This difference is especially true of the seed proteins from which we derive most of our feeds. Grasses and forages appear to have a better balanced amino acid content and are, therefore, valuable supplements to grain feeds (36).

Soybeans contain perhaps the best balance of amino acids of any of the seeds which are used for feed and compare favorably with grasses and forages.

Neither amino acid analyses of SOM nor nutritional studies designed to evaluate the meal as a source of amino acids has reached a stage where the most efficient use can be made of the meal protein. The two most used sources for analytical data are the compilations of Block and Bolling (37) and the work of Kuiken and Lyman (38). The compilations of the first authors represent averages and the value given for methionine appears to be high when compared with other reports.

Kuiken and Lyman ran microbiological assays for the essential amino acids on 20 different varieties of soybeans in which the samples of the same variety from different locations were composited to eliminate differences due to environment. The differences between the high and low values of lysine, methionine, and tryptophan in these varieties were 17.5, 19.5, and 14%.

These differences indicate a varietal difference for these critical

amino acids, and have encouraged geneticists at the U. S. Regional Soybean Laboratory, Urbana, Ill., (43) to investigate the feasibility of breeding for high-methionine content. The work of Kuiken and Lyman does not disclose variations of the same variety grown at different locations. Also, the varieties studied do not include such important commercial varieties as Hawkeye, Blackhawk, Chippewa and Clark which represent a large share of the crop.

The average amino acid contents reported do not necessarily represent an average for commercial SOM. In this connection we have been unable to find data which indicates what percentage of the crop is accounted for by each variety.

Figures 2 and 3 illustrate the percentage of essential amino acid requirements of chicks and of swine that are supplied by SOM in light of our present knowledge. The dotted areas represent variations between the analytical data of Block and Bolling and the averages given by Kuiken and Lyman, and include variations in nutritional data. The nutritional data, or amino acid requirements, for swine was taken from the recent publications of Beeson (40) and Curtin (41), and that for the chick was taken from the National Research Council report (3).

The area of diagonal lines represents a possible 20% of the amino acid unavailable for growth; i.e., 80% digestibility. Actually, the percentage availability of amino acids in SOM is a matter of speculation at the present time because of lack of experimental data. We have chosen the value of 20% unavailability because of the recent work at the American Meat Institute Foundation (42, 43) which indicates that about 80% of the lysine and methionine in autoclaved SOM is available for rat growth. It is interesting to note that these workers report that only 44% of the methionine in raw soybean meal is available to the rat. Processing conditions undoubtedly affect the availability of amino acids. Cornell workers (44) have noted a difference of 10 to 15% in the availability of lysine to chicks between commercially prepared sesame meal and laboratory preparations.

Information on the availability of the different amino acids in SOM to different animals will be difficult to obtain because of the presence of unknown growth factors and anti-growth factors which complicate growth data. It may be possible to determine amino acid availability with isolated soybean protein which can be obtained relatively free of these factors.

From Figures 2 and 3 it can be seen that considerable research is required before a definitive evaluation of the protein quality of SOM can be given. The areas of doubt shown in these graphs do not include variations due to varieties and processing conditions. Yet we find that arginine, glycine, leucine, methionine-cystine, and phenylalanine-tyrosine may or may not be present in sufficient quantities for the chick.

For swine, histidine, lysine, and methionine-cystine may or may not be present in sufficient quantities for optimum growth. Of particular interest is glycine. We were able to find only two analytical values in the literature (37, 45) which differed by several fold.

Obviously feed mixers are at a loss if they depend upon these reported values. The large dotted area for methionine-cystine for the chick is in part due to the recent work of Scott and his students (46, 47) at the University of Illinois, which indicates that the requirement for chicks may be lower than that given by the National Research Council.

SOM is seldom fed alone. In the Midwest, the corn-soya ration is one of the most popular. Figures 4 and 5 illustrate the percentage of essential amino acids of chicks and swine supplied by corn-soya rations where SOM supplements the deficiencies of lysine and tryptophan in corn proteins, and where corn proteins supplement the deficiencies of sulfur amino acids in SOM.

In these graphs only the analyses given by Block and Bolling (37) were used. The amino acid requirements of the chick were taken from the National Research Council report (3) and that for swine from Beeson (40), except for histidine where the value given by Curtin (41) was used. The 14% protein level for

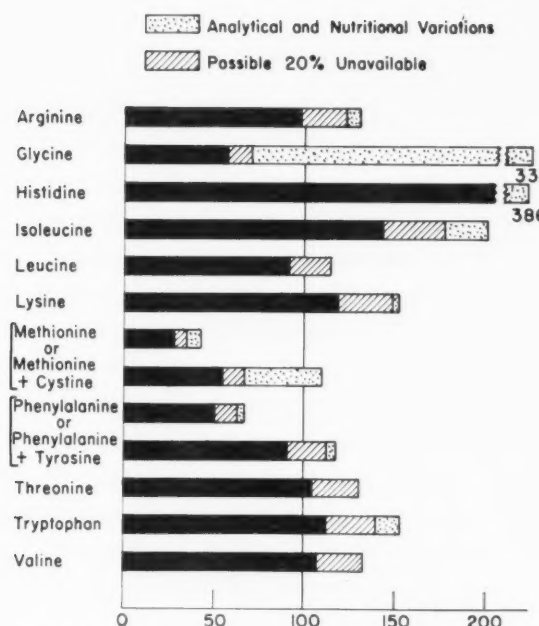


Fig. 2. Percent of essential amino acid requirements of the chick supplied by soybean oil meal.

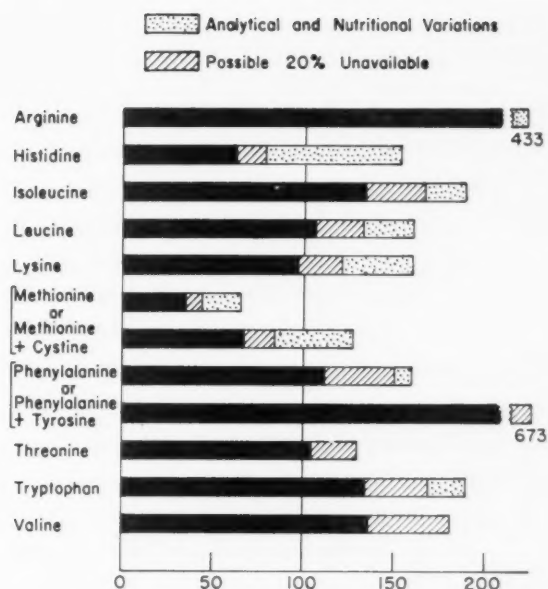


Fig. 3. Percent of essential amino acid requirements of swine supplied by soybean oil meal.

swine is based on the work of Catron *et al* (48).

The areas shown by diagonals again denote a possible 20% of the amino acid as not available for growth. These graphs indicate that lysine is the limiting amino acid in a corn-soya ration fed to swine. The chick is, however, more fastidious in the quality of its protein. It appears that glycine and methionine-cystine are limiting for the chick, with arginine, lysine, phenylalanine-tyrosine, and tryptophan being present in borderline quantities.

Anything that genetical research can do to increase the amounts of these amino acids in SOM would increase its value for poultry and swine feed. More accurate analytical data on the amino acid composition of commercial varieties of soybeans would be of assistance to feed manufacturers in avoiding deficiencies of these borderline amino acids in their feeds.

Isolated Soybean Protein in Nutrition

Nutritional grades of isolated soybean protein have become commercially available. Nutritionists are using this protein and their publications have begun to appear. This protein probably represents about one-third of the protein in SOM and is apparently free of antinutritional factors even though it has not been toasted. Table II shows the essential amino acid requirements of chicks and swine as percent of protein compared with the amino acid content of one of these nutritional grades of isolated soybean protein. Like SOM,

it is apparently deficient in the sulfur amino acids. With properly conducted feeding experiments, it should be possible to determine the maximum performance that can be expected from soybean protein which is free of antinutritional factors.

However, it must be remembered that the isolated protein may not be representative of the total protein in SOM. With SOM, it has not been possible to establish a value of maximum performance because of the uncertainty that the antinutritional factors have been completely destroyed and, if so, what was the effect of heat on the nutritional value of the protein.

Dr. Scott (49) at University of Illinois stated that he has consistently observed faster growth with chicks fed a purified diet using isolated soybean protein than when the protein was furnished by SOM. In one set

of experiments (50) a properly supplemented diet containing isolated soybean protein gave a 4-week feed efficiency of 1.47 pounds of feed per pound gain, while a properly supplemented diet containing corn-soya gave a feed efficiency of only 1.82. The superiority of the purified diet can be attributed to the absence of antigrowth factors.

Although experiments have not been set up to compare the growth of swine on a purified diet containing isolated soybean protein with a diet containing SOM, the work of Becker and Terrill (51) indicates 10 to 20% better feed efficiency with isolated soybean protein than with SOM or with corn-soya. For example, dried skim milk (52) and isolated soybean protein (53), properly supplemented, gave a feed efficiency of 2.2 pounds of feed per pound of gain, while SOM gave a maximum feed efficiency of 2.45 (54), and corn-soya 2.64 (55) and 2.77 (56). These results indicate that the antigrowth factors in SOM and in corn-soya may reduce feed efficiency by as much as 10 to 20%.

Unfortunately, an industrial grade of soybean protein has been used in many of the nutritional studies that have been made with isolated soybean protein. The resulting data have served only to add confusion to the problem of evaluating the nutritional quality of soybean protein. These industrial grades of soybean protein have been modified to suit them to particular industrial applications and their nutritional properties are unknown.

For most industrial applications, it

Table II.—Essential Amino Acid Requirements of Chicks and Swine as Percent of Protein Compared with the Amino Acid Content of a Commercial Nutritional Grade of Isolated Soybean Protein

Essential Amino Acid	Isolated soybean protein*	Chick N.R.C. ⁴	Swine Beeson ⁴⁰ , Curtin ⁴¹
Arginine	8.3	6.0	1.8
Glycine	4.1	5.0**	—
Histidine	2.6	0.75	1.9
Isoleucine	6.5	3.0	3.2
Leucine	7.5	7.0	5.0-6.0
Lysine	6.8	4.5	4.2-5.5
Methionine-cystine	1.6	4.0**	2.8-3.2**
Phenylalanine	5.0	1.6	3.6
Threonine	3.9	3.0	3.0
Tryptophan	1.0	1.0	0.8
Valine	5.5	4.0	3.1

* Analyses furnished by the manufacturer.
** Deficient in isolated soybean protein.

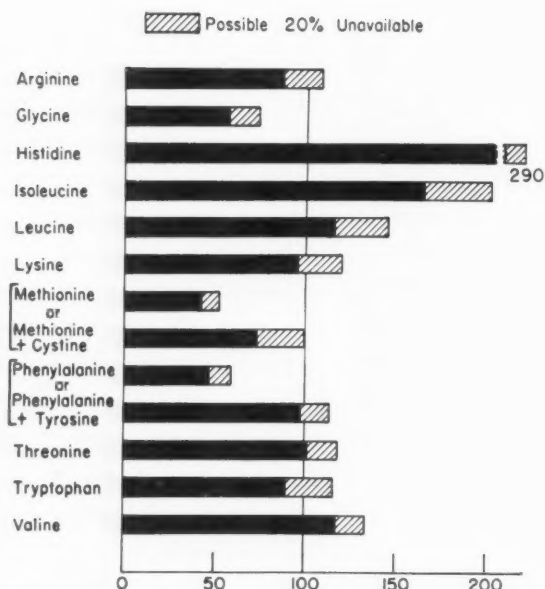


Fig. 4. Percent of essential amino acid requirements of the chick supplied by a corn-soya ration at 20% protein level.

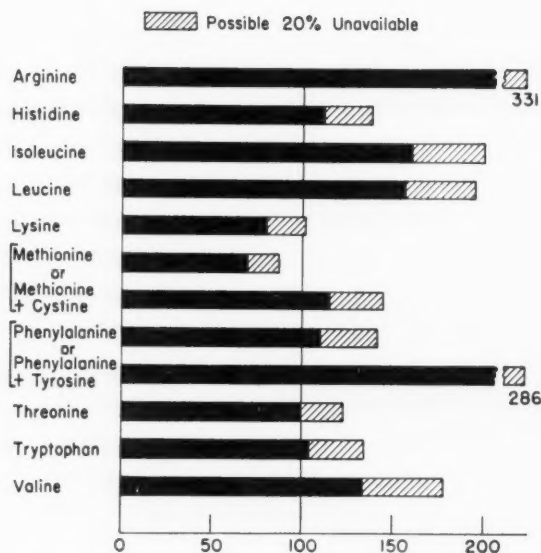


Fig. 5. Percent of essential amino acid requirements of swine supplied by a corn-soya ration at 14% protein level.

is necessary that the protein have a light color and both sodium sulfite and sulfuric acid are used freely during isolation procedures to inhibit the browning reaction. Another common practice is treatment with alkali to regulate molecular size and viscosity properties. Both of these treatments cause severe damage to the essential amino acids, the extent of which is unknown, and there is no object in studying this damage because manufacturers have available nutritional grades of isolated soybean portein which are manufactured under conditions that result in minimum damage to the protein. The alkali degradation products are quite unstable and may undergo a variety of reactions with other amino acids in proteins. In this connection, several laboratories (57, 58, 59, 60) have reported that industrial grades of soybean protein have lost nearly all of their cystine.

Summary

The most urgent research needed on SOM is compositional studies on biologically active components. These biological active components include unknown growth-factors (vitamins), isoflavones (estrogens), saponins, essential amino acids, and antinutritional factors, including antivitamin. Quantitative information on the amounts present in commercial varieties and the effect of environment on composition is needed. The availability of such information would possibly allow geneticists to increase or decrease the amounts present as desired.

In addition, the properties of these biologically active compounds should be studied to learn of their fate dur-

ing the toasting process. Information on the reactions that occur during the toasting process could lead to the addition of other reactive substances to the meal to facilitate the inactivation of antinutritional factors and thus increase the value of the meal for feed. Each percentage increase in feed efficiency of SOM is worth \$4 million per year to American agriculture at current production levels.

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(Continued on page 18)



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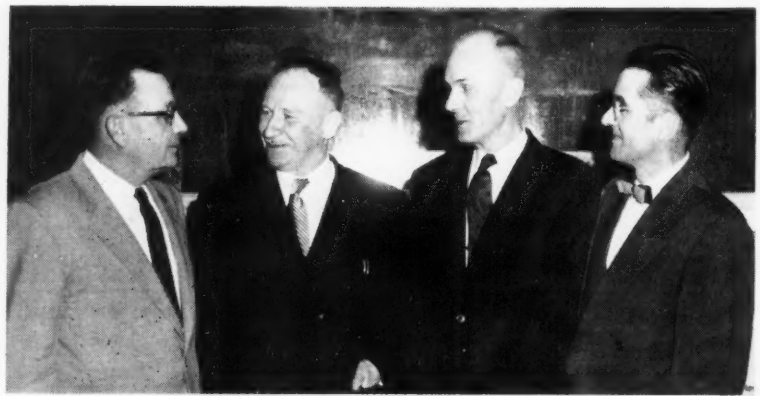
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AT CANADIAN CONVENTION, left to right, Albert Dimond, president, American Soybean Association; Gilles DePutter, newly elected chairman, Ontario Soya-Bean Growers' Marketing Board; Fred J. Rossiter, U. S. agricultural attache; and George Phillips, retiring chairman of the Ontario Marketing Board.

Canada, U. S. Face Good Year for Oils

CANADA and the United States face a good year for worldwide consumption of vegetable oils, Fred J. Rossiter, U. S. agricultural attache to Canada, told Ontario soybean growers at Chatham recently. The occasion was the combined agricultural convention.

"I believe there is room for expansion of soybean acreage in Canada and the United States," he said.

"I feel our countries will continue at a high economic level in 1956, with a good demand for meat and dairy products and a consequent increased demand for soybean meal," he said. "Employment, too, will continue at a high level, and the demand for vegetable oils will be good."

However, he said, North American soybean production has increased

gradually through the years, and one year of rapid expansion in planting and production could result in a price collapse.

The speaker said that the economy had reached a high level in Europe and in some Latin American countries, and there was a good demand for fats and oils on the world market.

Manchuria, before World War II, one of the leading exporters of soybeans and peanuts, has exported recently only a trickle of its former production.

India, also a large-scale peanut exporter before the war, has now become an irregular source and is not a primary exporter.

More than 200 western Ontario soybean growers attended the sessions. They were told by a panel of experts that Canada is leading the United States in average production of soybeans per acre.

SOYBEAN FUTURES PRICE CHARTS

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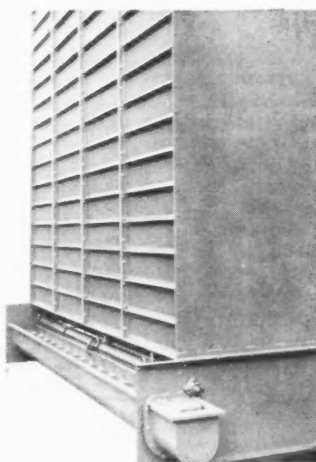
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Mr. Harding, like other Shanzer full time drier specialists, is well qualified to give you complete planning assistance. His 14 years of experience in the grain processing industry includes expert knowledge of drier layout, flow problems and special handling equipment. Let this kind of experience and service help put your expansion plans into operation. Write for the name of the Shanzer representative nearest you. No obligation, of course.



A Shanzer Drier has played a big part in the expanded service of the Kandiyohi Farmers Union Elevator Company, Kandiyohi, Minnesota. Manager is Perry R. Haugen.

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Warm air does the drying! And one method...Shanzer's screen column... provides more air per bushel of grain in process than any other design. With greater air volume, higher capacities are obtained with *lower* temperatures; every kernel is thoroughly exposed to moisture-absorbing air. Shanzer vertical screen column design results in free-flowing, self-cleaning grain movement, eliminating abrasion and danger of material "hang-up" in the column. The exclusive Shanzer column assures uniform, safe drying of grain.

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With Shanzer's exclusive screen column design, the movement of grain through the *entire* drying and cooling column is easily seen. With this "inspection at a glance" you *know* immediately if any foreign material has entered the column. This added safety factor is not possible when grain movement is masked by metal walls or other ordinary type construction.

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Thin-column design affords complete drying and rapid movement of grain through the drier. Because of the shorter exposure time to the warm air actual grain temperature *remains lower*. Thus, complete cooling is accomplished in less space, so more of the column is utilized for drying! Screen column efficiency works both ways... in drying and in cooling...for lowest operating costs.



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SOYBEANS tolerate a wider range in planting time than most crops do. There is a range of at least 3 to 6 weeks—depending on whether you live in the northern or southern part of the bean belt—during which you can plant the seed and get a good crop in a normal year.

This range of planting dates widens as you go from north to south. Since the growing season is longer, soybeans can be planted earlier and also later with good results in the southern part of the belt than in the northern part.

Generally the longer a variety has to grow the higher will be the yield. However, there must be compromises in the choice of a variety and planting time. Planting too early may give poor stands, slow early growth and more weed competition.

In the North Central area the middle to the last half of May has given the highest yields when mid-season varieties adapted to the area are used.

Corn planting time is good soybean planting time in most Northern States. In some localities soybeans

The Optimum or Best Planting Dates for Soybeans

Experiment station recommendations for full season varieties.

can be planted ahead of corn if this will save time. They stand cold a little better than corn after emergence. But in many southern areas corn is usually planted well ahead of soybeans.

Proper soil and moisture conditions are as important as the exact date so:

1—Wait until the soil is warm before planting. Planting seed in warm soil results in quick emergence and rapid growth, an important factor in weed control. Weeds are usually more abundant in early than late planted beans.

2—Do not plant in dry soil. There should be enough moisture for the seed to germinate promptly. Wait for a rain, work the soil and then plant.

3—Thorough cultivation to kill a crop or two of weeds before planting justifies some delay in the planting date.

Late planted beans make up quickly for lost time. And beans planted at widely different dates may bloom at almost the same time. This is because photoperiodism or length-of-day rather than planting date determines when the soybean plant will bloom and set seed. Soybeans are not like corn with a set length of time from planting to maturity.

States E. E. Hartwig, agronomist at the Delta Branch Experiment Station, Stoneville, Miss.: "Optimum planting date for the Southern States appears to be the date when the minimum soil temperature attains 65°F. and the day length reaches or exceeds 14½ hours. Planting under such conditions will give more rapid growth, higher seed yields and better seed quality than earlier planting."

When soybeans must be planted after the best planting date an earlier maturing variety should be used in the Northern States. In the Southern States a late maturing variety will give much better results.

If soybeans are to follow or precede another crop in the same season this will of course affect the planting date and also the variety.

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Sees Oils Surplus

INCREASING surpluses of edible fats and oils over domestic needs are in prospect in the United States for years to come, Howard J. Houk, assistant manager of the economic research department of Armour & Co., said at the annual convention of the Valley Oil Seed Processors Association at Biloxi, Miss.

Mr. Houk pointed out that total fat production has risen rapidly, although per capita consumption of shortening, butter, margarine, lard, and other fat and oil products remains stationary at about 48 pounds per year. Population growth of 2% a year is not nearly enough to offset production increases, he said.

Action of the government early in January in permitting foreign countries to buy U. S. oils with their own currencies resulted in exports on such a large scale "that concern has become general of a shortage before the new crop," Mr. Houk said. The outlook, however, is for plentiful supplies.

Principal increase in the edible fat and oil supply has been in soybean oil. Production is now 50% greater than in 1950.

Progress In Texas

BREEDING work with soybeans at the Texas Agricultural Experiment Station at Chillicothe has progressed to the point where there are varieties available with commercial possibilities in the area, according to J. Roy Quinby, the superintendent. "We think that the time has come when farmers should be thinking of making trial plantings," he says.

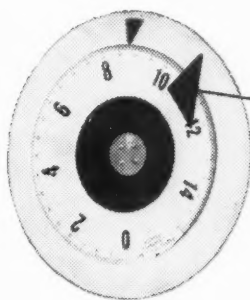
There is no commercial production of soybeans in the area at present, and probably will not be unless the rabbit population is greatly reduced.

In past years no varieties have been available that were sufficiently shatter resistant to be grown commercially but some of the newer varieties in the Experiment Station test are sufficiently good in this respect, according to Mr. Quinby. He says the new Lee has considerable promise.

Interest in Cuba

"Considerable interest in soybeans is developing in Cuba," writes R. L. Beacher of the Arkansas Experiment Station, Fayetteville, Ark. Professor Beacher recently was in Cuba on a temporary rice assignment.

"Several large Cuban rice plantations will be planting some of the southern U. S. varieties for trial during the coming months. They have reported generally poor results in limited past plantings."



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It may be a moisture pocket, a ball of weevils, insects, mold, or chaff and foreign material — could be germination — any of several *unknown, invisible conditions* which cause heating of grain . . . which in turn cost you money in down grading, loss of grain, unnecessary conditioning expense.

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Return to No. 2? (two views)

Maltas and Henebry presented opposing views on the desirability of returning to the No. 2 trading basis on soybeans at

the recent convention of the Farmers Grain Dealers Association of Illinois. The Association recommended a return to the No. 2 basis.

Consumers Demand Quality Soybeans

By KENNETH J. MALTAS

A. E. Staley Manufacturing Co., Decatur, Ill.

SOYBEAN GROWERS have spent much time and effort during the past few years trying to build large foreign markets for American soybeans.

In many cases, foreign buyers told American Soybean Association representatives, rather bluntly, that American soybeans carried too much foreign material to be acceptable to their trade.



K. J. Maltas

Processors knew from firsthand experience that American consumers were just as much interested in quality products as were foreign buyers.

It is an old rule in merchandising any product that the seller must satisfy the desires of the buyer—or the buyer will find a substitute product or supplier.

For many years processors had purchased soybeans on a No. 2 grade which permitted 3% of foreign material. The amount of foreign material had been increasing year after year. Customers were complaining about product quality.

Because of these steady increases in foreign material, processors began to buy beans on a No. 1 grade with 2% of foreign material about Oct. 1, 1953. For the first time in 7 years the amount of foreign material went down from the previous year.

The 1954 crop was bought on a limit of 2% f. m. and again there was a reduction. With minor exceptions the entire 1955 crop of soybeans was traded on the basis of 1% allowable f. m. and, based on records to date, there has been another reduction in f. m.

Trading soybeans on the basis of 1% foreign material caused extra work at the country elevator. There would seem to be no question about that because all receipts had to be checked more carefully.

If it costs more to market beans with an allowable maximum of 1% f. m. we believe that the correct solution to that problem is to take a wider margin for handling soybeans.

It seems to us that processors and grade dealers alike are service organizations. We both must give the consumer what he wants and we should make proper charges for the services which each of us performs.

Let me show you the history of foreign material content in soybeans in recent years. These figures represent receipts at the A. E. Staley Mfg. Co. at Decatur, Ill., but we believe they should be representative of those in the industry.

Crop Year	% Foreign Material in Soybean Receipts	Buying Limits on Foreign Material
1955	1.75 (Sept.-Dec.)	1.00
1954	2.13	2.00
1953	2.74	3.00*
1952	2.92	3.00
1951	2.41	3.00
1950	2.15	3.00
1949	2.06	3.00
1948	1.91	2.00**
1947	1.89	2.00**

* on 1/4 crop—2.00 on 3/4 crop.

** FM .99 dock.

(Receipts from Ill., Ind., Mo., Ia. and Minn. Majority from Ill.)

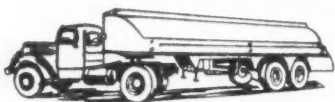
You may be interested in seeing a breakdown by states on the number of cars which carried 1, 2 and 3% foreign material from the 1955 crop. Here is what the Staley Co. receipts have shown for the September through December period.

Origin	% of Cars 0 to 1%	% of Cars 1.1 to 2%	% of Cars 2.1 to 3%	% of Cars Over 3%
Iowa	83.1	13.1	2.6	1.3
Minn.	53.6	30.0	11.8	4.5
Ill.	50.1	27.9	13.7	8.3
Mo.	36.1	45.3	12.7	5.9
Ind.	22.3	40.0	24.6	13.1

Iowa and Minnesota beans generally have been cleaner than Illinois beans while Missouri and Indiana have carried more foreign material than Illinois.

If we combine the 1% and less figures with the 1.1 to 2% figures for the 1955 crop, thus giving us a category of 2% or less for the 1955 crop, the comparison with the 2% figures in previous years for Illinois beans is:

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Crop Year	% of Ill. Receipts 2% and Less	Buying Limit
1955	78.0	1%
1954	69.8	2%
1953	52.1	3% on 1/4 crop 2% on 3/4 crop
1952	43.1	3%
1951	44.2	3%
1950	54.0	3%
1949	62.3	3%

This table indicates the probability of a considerable improvement in the 1955 crop. It appears that the farmer did a wonderful job in cleaning up the 1955 crop of beans.

Tighter grades and buying limits protect the good farmer who delivers clean beans because the price is now predicated on a clean bean basis.

Has the processor benefited from cleaner beans? Yes. He has primarily benefited in being able to produce better products which we believe will increase our markets.

The desire of the processor to buy clean beans is not an arbitrary one. It is a policy dictated by the consumer of soybean products.

Premiums Better Than Discounts

By WILLIAM J. HENEBRY

Manager Monticello Grain Co., Monticello, Ill.

WE, AS COUNTRY elevator operators, have no quarrel with the grading standards of soybeans, but rather with the buying policy which the processors are using.

I believe in encouraging the production of high quality grain, but I am adverse to continually confronting the producer with DISCOUNTS, DISCOUNTS, DISCOUNTS—and never using the word PREMIUM.



William J. Henebry

Mr. Maltas stated at Champaign during Farm and Home Week that he believed the producer received a higher price for beans basis No. 1 than he did the year before because buyers generally base bids on an average price in accordance with the average product they receive, and if I read his charts correctly the average beans received were 1.75% f. m.

Now whether the producer received a higher price could be quite controversial and impossible to prove or disprove. From these facts, however, I can state that the producer who produced beans of 1% or less f. m. was penalized for doing so inasmuch as he received the price of soybeans that contained 1.75% f. m.

Would it not be fairer to trade soybeans on the basis of No. 2 and actually pay a premium to those who produce No. 1 beans so that they might be rewarded for their efforts?

Inasmuch as broken bean particles

(Continued on page 27)

Why PATAPAR® for wrapping MARGARINE and SHORTENING?

Patapar Vegetable Parchment, because of unique qualities, is peculiarly suited for wrapping and protecting margarine and shortening—bulk or retail packages. Note these Patapar advantages:

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COLUMBIAN

SINCE 1893

The economical 12' x 24' Columbian bolted steel classifying tanks in this new elevator of the McKenna Grain Co., Kingman, Kansas, permit quick on-the-spot blending and classifying of grain for McKenna's customers.



This 85,000 bushel storage elevator of the Gano Grain Corp., Cunningham, Kansas, is one of the early adaptations of Columbian Bolted Steel Tanks to blending and classifying operations. Built in 1950, this elevator has a head house, unlike the McKenna elevator, above. Interest in the successful Gano blending operation resulted in many subsequent Columbian installations, such as the one at Kingman.

On-the-spot blending and classifying of grains is becoming more and more the function of the country elevator. It offers convenience and savings for growers, feeders and shippers. Columbian engineers helped make this service easy and profitable for McKenna Grain Co. with this modern elevator, erected in 1955. The Columbian bolted steel storage tanks have 50,000 bushels capacity. The design, eliminating the expense of a head house, was made by Columbian engineers... and Columbian acquainted the owner with a reliable contractor for the quick construction.

The leg is designed to handle 5,000 bu. an hour. An extra large dump pit is included to take advantage of that capacity. This permits speedier unloading... reduces traffic congestion and time lost by waiting trucks... eases box car shortages by faster handling.

The Columbian classifying tanks permit receiving different grains and grains in any acceptable condition without danger of contaminating the main storage.

McKenna chose Columbian bolted steel grain tanks for the best buy... the best design... the best record of trouble-free service. They are fire-safe... weather-proof and so tight they are also widely used for the storage of dehydrated alfalfa under inert gas pressure.

Invite a Columbian engineer to discuss your elevator or storage requirements. You incur no obligation.

Write: **COLUMBIAN STEEL TANK CO.**

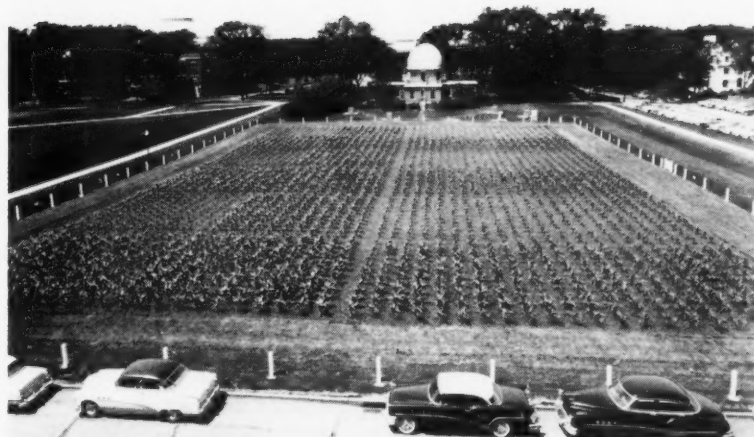
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Illinois to Host Joint Soybean Meetings



MORROW PLOTS can be viewed by convention visitors at the University. They are the oldest soil experimental plots in America and the oldest corn test plots in the world, in continuous use since 1876.

FOR THE FIRST time in 4 years, the American Soybean Association again returns to a university campus for its annual convention.

The place is the University of Illinois, at Urbana. The dates are Aug. 13-16.

And for the third successive year grower and processor groups will hold joint meetings. The National Soybean Processors Association and the advisory board of the National Soybean Crop Improvement Council will meet at the same time as ASA.

The meetings will be notable in several ways:

- Soybean people will be returning to Illinois, the leading soybean state and the center of soybean production. There, much pioneer history has been made. The University has made many notable contributions to soybean growing and also usage over the years.

- The meetings will help the U. S. Regional Soybean Laboratory, also at Urbana, celebrate its 20th anniversary. The Laboratory's varietal improvement program, which has brought out most of the newer, adapted and higher yielding varieties in use today, has been vital to the growth of the soybean industry. In terms of money, the program has been worth many millions. The Laboratory and the University are co-hosts to the convention.

- There will be a field day again this year. Visitors will see the test work at the University's agronomy farm and the U. S. Regional Soybean Laboratory.

Since the meetings will be held at the University, it is natural that we will be brought up-to-date on the latest research affecting soybeans. But we will also take a deep bite

into tough present day problems, including markets and exports and the promotion of soybean products. The soybean industry is at long last beginning to move ahead on these fronts.

Convention headquarters will be in the Illini Union on the campus.

The Regional Laboratory-University committee for the convention: J. L. Cartter, director, U. S. Regional Soybean Laboratory, chairman; W. L. Burlison, retired chairman of the department of agronomy, University of Illinois; M. B. Russell, chairman UI department of agronomy; R. T. Milner, chairman UI department of food technology; and Frank B. Lanham, chairman UI department of agricultural engineering.

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PUBLICATIONS

How Far Are August Crop Reports Off?

EVERYONE knows that the size of crops produced each year cannot be estimated as precisely early in the season as later. An article entitled, "Oilseeds and Fats and Oils: Differences Between Early-Season and Final Estimates of Supply and Demand Factors Used in Making Outlook Forecasts," by Hym an Weingarten of the U. S. Agricultural Marketing Service summarizes research designed to determine by how much the successive monthly forecasts of harvests differ from the final estimate and whether the early-season forecasts are statistically biased. Crops covered are soybeans, flaxseed, peanuts, cottonseed (cotton), and tung nuts.

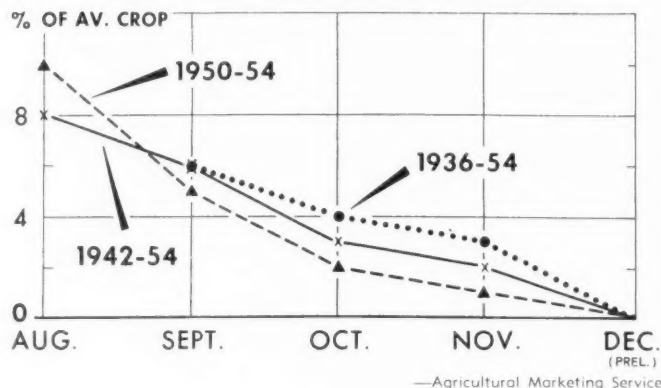
Forecasts of production of oilseeds by the federal crop reporting board are based on the condition or probable yield reported by the crop reporters on the first of the month and assume average weather, disease, and insect conditions for the rest of the growing season. Forecasts are issued in successive months through harvest, and a preliminary estimate of production is given in December. Further revisions based on market-

ings or other check data and on the 5-year Census of Agriculture are made thereafter.

The first forecast of soybean production, for example, appears in the August crop report and relates to expected production as of Aug. 1. Many unpredictable factors, such as hail, excessive rain, and drought during later months may cause final production to differ from what is expected as of that date. Assuming no consistent statistical bias in the

SOYBEAN PRODUCTION ESTIMATES

Differences Between Early-Season Forecasts and Dec. Estimates



forecasts, however, the best indication of actual production as of that date is the figure reported by the crop reporting board.

One way in which differences between early-season forecasts and final production estimates can be studied is in terms of the standard deviations of such differences. Standard deviations are a measure of the amount of scatter or dispersion about an average; the average plus or minus one standard deviation ordinarily includes about two-thirds of the observations. With the kind of data analyzed in this study, the size of the standard deviation directly indicates the relative size of the differences for any given monthly forecast from the preliminary December production estimate.

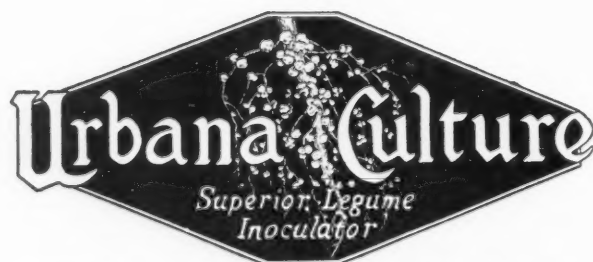
For the reasons mentioned, the first forecast, on the average, varies most from the preliminary December figure and thus has the highest standard deviation. For the years 1942-54, the standard deviation for August is 18 million bushels. For September, the standard deviation drops to 13 million bushels and it continues to decline to 5 million bushels in November.

The accompanying chart shows, in terms of percentages of the actual crop, the standard deviations based on data for three periods—1936-54, 1942-54 and 1950-54. The lines for these periods are almost identical. Since these values are based on differences between the early forecast and the preliminary December estimate, they drop to zero in December.

The full article discusses results and methods of analysis in detail. It also includes a discussion of relations between several available estimates of season average prices.

INOCULATE SOY BEANS

with



IT PAYS!

The Urbana Laboratories
Urbana, Illinois

Copies can be obtained from the Division of Marketing Information, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C.

SOUTH CAROLINA. Soybeans can be grown successfully in all sections of South Carolina. But most of the commercial acreage is located at present in the Upper Coastal Plain area, particularly in Calhoun and nearby counties.

The commercial acreage is also spreading to Lower Coastal Plain counties, such as Hampton.

Soybeans fit well into most crop rotations in South Carolina. They may be used as a full-season crop or as a part-season crop following small grains.

One of the most popular rotations is: corn, small grain followed by soybeans, cotton.

SOYBEANS. By H. A. Woodlee and E. C. Turner. Circular 370, revised April 1955. Clemson Agricultural College, Clemson, S. C.

William J. Henebry

(Continued from page 23)

which pass through an 8/64th inch screen are considered f. m., this close tolerance seems rather unfair and is of great concern to the country elevator which must handle and store the beans in the interim between the combine and ultimate destination because as we all know every time beans are moved it adds to the amount of broken bean particles.

I have before me some figures which I believe will prove that trading of beans on the basis of No. 1 f. m. is impractical and that the amount of f. m. in storage beans is higher by virtue of broken bean particles than those shipped at harvest time.

As a result of some questionnaires circulated among grain men, and from material gathered from inspection offices, we find that of the cars shipped from country points:

45% contained 1% or less f.m.
33% contained 1.1% to 2% f.m.
14% contained 2.1% to 3% f.m.

Further that without exception beans shipped from storage ran higher in f. m. than those shipped at harvest.

In comparison to the 45% that ran 1% or less shipped at harvest, 35% ran 1% or less when shipped from storage—which confirms the contention that broken beans add to the increase of f. m. between harvest and the time they are shipped. This can only result in a loss to the warehouseman.

Mr. Processor, give the producer and the country elevator operator JUST A LITTLE BREAK!

\$11,912.00 NET PROFIT ON SOYBEANS IN 8 MARKET DAYS

Below we itemize NET PROFITS we took on our MAY & JULY SOYBEANS in 8 market days:

April 11, 1956, net profit \$	1,829.50
12, 1956, net profit	1,971.50
13, 1956, net profit	842.00
14, 1956, SATURDAY	
15, 1956, SUNDAY	
16, 1956, net profit	956.00
17, 1956, net profit	538.00
18, 1956, net profit	464.00
19, 1956, net profit	1,457.50
20, 1956, net profit	3,853.50
GRAND TOTAL,	
PROFIT	\$11,912.00

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"Following YOUR market advice—tops in my opinion—have taken \$5,000 profit in SOYBEANS in past 3 WEEKS!" La. —Apr. 15, 1956.

"Sure did WONDERFUL with that \$5 subscription—OVER \$3,000 PROFIT so far, and if I had gone along on first couple of letters, would have done much better." OHIO—Apr. 17, 1956.

"Am another satisfied customer. Made enough on JULY beans, FIRST WEEK I took service, to pay for service REST OF MY LIFE, and I figure on living a LONG time yet." —IOWA—Apr. 17, 1956.

"In 28 years in grain business, YOUR commodity-stock service was FAR THE BEST used during that period." —NEBRASKA. Apr. 12, 1956.

"Hats off to both YOUR service and SOYBEANS! —Your advice on beans could not have been more perfect. Have picked up some VERY FANCY PROFITS." COLORADO —Apr. 6, 1956.

HOW HIGH will MAY and JULY SOYBEANS GO? Our subscribers KNOW! Do YOU? —Read our ad. in NEXT column — TRY \$5 worth of our service — our next 10 twice-a-week Tuesday and Friday letters. Use order blank at bottom of ad. in next column. Act NOW — or NEVER!

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OUR STOCKS ALSO MADE HUGE PROFITS!

Gillette	bought at	.75 now	\$50.00
Goodrich	bought at	\$3.00 now	84.50
Kimberly			
Clark	bought at	8.75 now	55.00
Union Bag	bought at	7.50 now	42.00
Phillips Petro.	bought at	30 3/8 now	94.00
Cities Service	bought at	14.75 now	65.00
Wheeling Steel	bought at	11.25 now	53.75
Worthington	bought at	14.00 now	51.50

If YOU want to make money—BIG MONEY—out of SOYBEANS—WHEAT—CORN—COFFEE—COTTON—STOCKS—our twice-a-week TUESDAY and FRIDAY letters will give you EXPERT ADVICE backed by 38 years EXPERIENCE. We have been studying markets since 1918. Our service started business Feb. 1, 1928—now in 28th year!

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SPECIAL "GET ACQUAINTED" OFFER: Our next 10 TUESDAY & FRIDAY letters, covering ALL markets mentioned above, also (FREE) our latest lists: 7-low-priced stocks; 7-high-quality stocks; 7 finest quality stocks—that should advance MUCH higher—EVERYTHING mentioned, \$5.00. — USE ORDER FORM BELOW.—NOW!

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GRITS and FLAKES . . . from the World of Soy

Formula Feed Division

Walter C. Ronk, vice president, **Barnard & Leas Mfg. Co.**, Cedar Rapids, Iowa, announces the establishment of the B & L portable formula feed blender division.

R. I. (Dick) Rankin, sales manager for the parent company, will also serve as sales manager for the new division.



Harry C. White

Harry C. White has been named assistant manager of the division. He will be in charge of production and engineering. He has been directing engineering design of the new hydraulic drive model B & L portable feed blender which is now in production.

Public Grain Elevator

The **Alabama Grain Elevator** is now operated by the Alabama State Docks Department as a public grain elevator, effective Apr. 1, M. L. Hibbets, manager, has announced.

The necessary applications are being filed for licensing and bonding under the U. S. warehouse act, the completion of which will require from 30 to 60 days. During this 30-60 day period, the elevator will be

operated as a state licensed and bonded warehouse.

The **Alabama Grain Elevator Co.** tariff No. 4 issued Apr. 8, 1955, will remain in effect until cancelled by an Alabama State Docks Department tariff, says Mr. Hibbets.

The present management and employees are being retained.

Blaw-Knox Promotes

Blaw-Knox Co., chemical plants division has announced the promotion of Ralph Berger to manager of special process sales at its Midwest headquarters in Chicago. He will direct sales and project engineering for all fats and oils processes.



Ralph Berger

Prior to his association with **Blaw-Knox** in 1952, Mr. Berger was employed by **Wurster & Sanger**,

Du Pont and **General Motors**.

Staley Ad Manager

Gene Staley, who has been advertising manager of the soybean division of **A. E. Staley Manufacturing Co.**, Decatur, Ill., has been named advertising manager of the corn division. He succeeds Henry Volle, who has been promoted to assistant manager of the company's grocery products department.



Rudy Dennis

Rudy Dennis has been named advertising manager of the soybean division to succeed Mr. Staley. He has been assistant sales manager of the formula feeds department.

General Mills Changes

Howard T. Von Oehsen has been named manager of sales for the chemical division of **General Mills, Inc.**, at Kankakee, Ill.

At the same time, Abner C. Hopkins, Jr., moves into the job of director of commercial chemical development activities. Hopkins formerly served in both capacities.

In announcing the appointments, the division's general manager, William F. Mitchell, pointed out that increasing activities in both the sales and commercial chemical development fields have created the need to divide the responsibilities.

Mr. Von Oehsen came to the chem-

ical division from **Heyden Chemical Corp.**

To Build at Memphis

Sale of an 11-acre tract on **Presidents Island** near Memphis, Tenn., to **Cargill, Inc.**, for the purpose of building a multi-million-dollar soybean processing plant, has been voted by the Memphis and Shelby County Port commission.

The plant is expected to process about 700 tons each 24-hour day, according to Lee Canterbury, Memphis district manager for **Cargill**. It will employ between 50 and 100 people and operate 24 hours a day, 7 days a week throughout the year. The plant will have a storage capacity of 2.2 million bushels of soybeans.

The company hopes to have the elevator and storage portions completed by Oct. 1, Mr. Canterbury is quoted as saying.

J. C. Hackleman and Clyde M. Woodworth, both well-known Illinois soybean authorities, will retire officially from their posts at the **University of Illinois** Sept. 1, the University announces. Both are honorary life members of the American Soybean Association, and Hackleman is professor of farm crops extension and Woodworth is professor of plant breeding.

Three promotions to new sales areas in the Iowa territory recently opened by **Master Mix** were announced by J. L. Krider, vice president and director of feed sales, **McMillen Feed Mills**. They are **Rol Levens**, **Don Long** and **Dick Rinehart**, who come from territories in Michigan, Illinois and Indiana. The areas will be served by **Master Feed & Seed Co.**, newly established feed warehouse located in Cedar Rapids.

Promotion of John Gilbert from formula feed sales coordinator to western sales manager in the meal department of **A. E. Staley Manufacturing Co.**, Decatur, Ill., is announced. And Robert Lighthall, who has been in charge of Southeastern States sales, will now have charge of Central States sales, and Reeder Miller, who has been western sales manager, will now be Southeastern States manager.

William A. Oudshoorn has been appointed manager of the midwestern territory of Ohio, West Virginia and western Pennsylvania for the sale of **American Mineral Spirit Co.**'s complete line of technical naphthas and petroleum solvents. The territory formerly was covered by Tom Barker who has been assigned to other duties. Mr. Oudshoorn has been associated with **American Mineral Spirits Co.** for 15 years.

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THE FINEST IN
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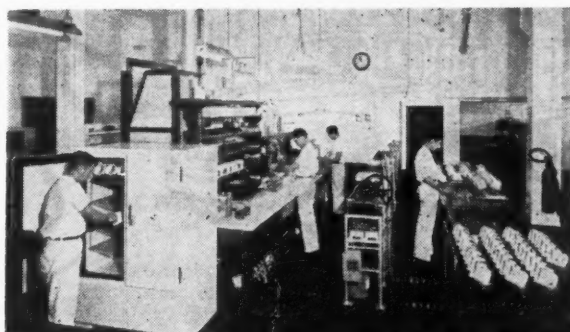
Memphis, Tennessee

Little Rock, Arkansas

Cairo, Illinois

Blytheville, Arkansas

Clarksdale, Mississippi



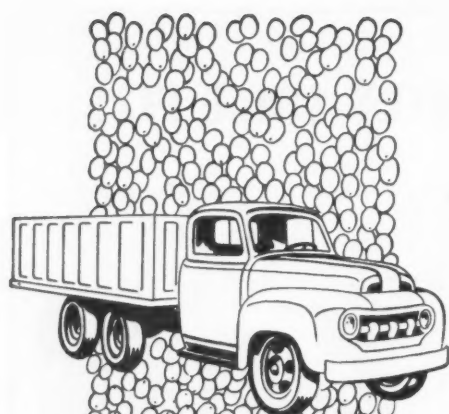
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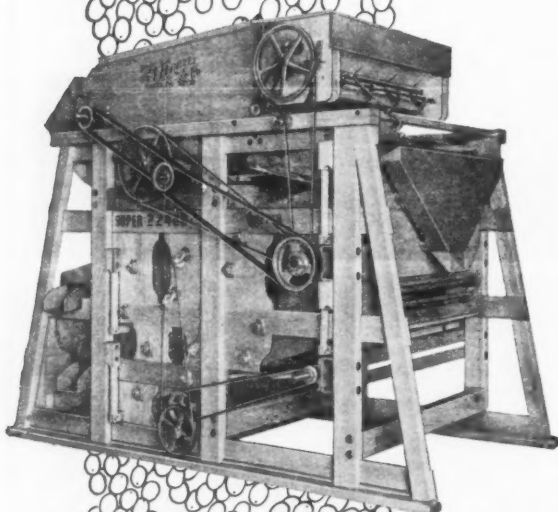
"Over Two Billion dollars worth of products analyzed since 1935."



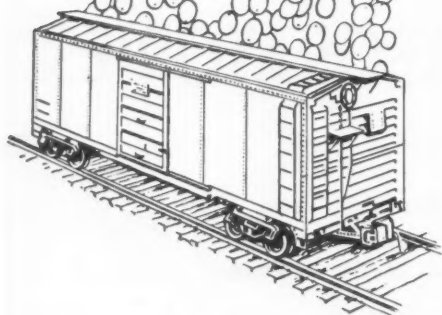
Buy 'em clean... Sell 'em clean!

[Clipper clean]

*(The new grades now make
it extra profitable to ship **only**
cleaned beans.)*



THE SUPER 2248-D
3000 BU. PER HR.
7½ HORSE DRIVE



This 2248-D Twin-flow "Bigboy" and the smaller Super 228-D—1200 bu. capacity—5 horse drive are two exceptional soybean cleaners. Customers say "we can now receive—clean and load in a matter of minutes." For those who prefer—both models also come in all-steel (not just armoured) construction.

A complete line of Clippers are available in sizes to fill every capacity and job requirement.

Heavy metal construction Super-Duty Clipper Elevators are available in any height and capacity.

Don't buy a moisture tester 'til you've had a good look at the most accurate, fastest, economical of them all—C.A.E. Halross. Write for information.

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A. T. FERRELL & CO.

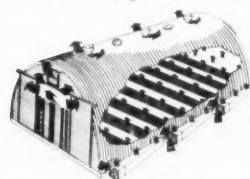
Saginaw, Michigan

CLIPPER

GRAIN • SEED
AND BEAN CLEANERS

NEW PRODUCTS and SERVICES

DRIER-STORAGE. A new quonset grain-drier-storage unit using unheated air has been successfully field-tested by the Stran-Steel Corp. The new drier building, which also cools as well as stores the grain after it has been dried, promises to revolutionize present methods



of harvesting, drying and storing grains.

With this unit the farmer can dry and store his whole crop with only one handling.

By enabling the farmer to harvest early at a high moisture content, the new system substantially reduces field losses.

The use of unheated air means no heat damage or loss in germination.

The quonset system is available in 2,000- to 40,000-bushel capacities.

For additional information write Soybean Digest 5e, Hudson, Iowa.

FERTILIZER HOPPER. New McCormick plastic fertilizer hoppers just announced by International Harvester Co. should last a lifetime. The hoppers are radically different in that they are made of Fiberglas reinforced with plastic.



The important feature of this new plastic hopper is that it will not corrode from weather or prolonged contact with fertilizer.

The fertilizer level can be seen at a glance through the hopper wall. The new hoppers are giant size with 115-pound capacity, so there are fewer stops for checking fertilizer level and filling the hoppers.

The new hopper is available for most McCormick planters and cultivators.

For more information write Soybean Digest 5c, Hudson, Iowa.

MANLIFT. Construction features and application of Allis-Chalmers manlift for fast inter-floor transportation are described in a new bulletin released by the company.

Requiring less installation space than a conventional stairway or an ordinary elevator, the manlift is being used in a wide variety of buildings including processing plants and flour and feed mills.

The manlift is also designed to convey bags and

other packed materials. It can be furnished with steps and bag carriers alone or in combination. An automatic tripping device discharges the bags at desired floor level.

The bulletin includes diagrams showing safety measures to be considered with each installation of the manlift, continuous operation per 24-hour day, cost of which varies between 20 and 50¢ depending on total height of the unit.

Copies of Manlift, 07B6878B, are available on request from Soybean Digest 5a, Hudson, Iowa.

TRACTORS. Seven completely new tractors are featured in the '56 line of the Cockshutt Farm Equipment Co.

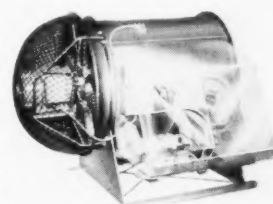
Two-tone color styling, added power, new hydraulic equipment, and built-in cigaret lighters are featured in these new Black Hawk tractors.

Principal attention is being focused on three Black Hawk models designed to offer farmers what the company terms "the widest possible range of power, versatility and economy." Designated as the "20," the "35" and the "Golden Eagle," these tractors range from two to five plow capacity and are available with a variety of front ends.

For further information write Soybean Digest 5d, Hudson, Iowa.

DRIER. A gas-fired crop drier that fits into any drying system has been added to the line of crop curing equipment manufactured by the Hartzell Propeller Fan Co., agricultural division.

The unit is furnished skid-mounted or with mounting brackets for use with the Hartzell batch drying bin. The skid-mounted model, with the heated air carried by a canvas duct, dries grain in wagon bed or storage bin, hay in the mow or even lumber. It can also be used for heating brooder house, shops or other farm buildings.



A full set of safety controls make this drier completely safe for all farm applications.

The fan is eight-blade high pressure design, 36 inches in diameter.

Complete details may be obtained by writing Soybean Digest 5b, Hudson, Iowa.

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Still Expect Big Acreage

PRICE OUTLOOK. Department of Agriculture officials are a little unsure how to evaluate the soybean price situation at this time. The most common belief is that soybeans will be fairly tight for the balance of this marketing year, and that prices will remain fairly high at least until new crop prospects are better known.

Prices have moved up relatively fast in recent weeks. It's due, market experts here think, mainly to increases in product value. Meal price has gone up substantially and oil has increased or held its own.

Three dollar beans at the farm are doubted by officials here, for this season at least. Prices will hit \$3 at the major city markets where speculative interest is high.

Officials think the small volume of beans left on farms as shown by the April crop report is not a reliable guide to the bean supply. This may be wrong but it's the position taken by most of the experts here.

There has been a fairly rapid movement of the crop to market this year. Officials point out stocks of beans at processing plants have been high all along.

The late April report of total stocks on hand will throw more light on the supply outlook for balance of the season.

Stocks will be worked down by end of the year to a lower level than last year in any event. Present estimate of carryover next Oct. 1 is only 6 million bushels. Total crush is estimated at a possible 280 million

bushels. The estimate of exports has come down to 65 million.

There is a possibility of a price break early this summer if a big acreage goes in. Any drops shouldn't be too sharp, however.

USDA is anxious to make as good a showing on prices as it can this summer and fall. Some export allocations of fats and oils are being held off purposely until beginning of the next season so there will be additional market to absorb the supply when the new crop is harvested.

No congressional action on a farm program is likely to come in time to have much influence on this year's plantings. Whatever is done in the way of soil bank legislation would apply to fall planted crops, or spring seed crops after they're in the ground.

Most officials here think the incentives will be in the direction of greater soybean acreage than in corn, even taking into account USDA plans to make loans available to growers not in compliance with acreage allotments.

The regular corn loan rate has been set at \$1.50 a bushel, national average. A loan to non-cooperators of \$1.25 a bushel has been announced by USDA.

Even so officials think soybeans in the \$2.70s this spring are likely to be more attractive than corn. Barring unforeseen developments, an acreage in line with the March estimate of plantings is anticipated here, with a crop of well over 400 million bushels.



By **PORTER M. HEDGE**
Washington Correspondent for
The Soybean Digest

EXPORTS. The 1956-57 season is likely to be another one of big export volume. The preliminary signs point to some cut in output of cottonseed and lard in the coming season, but a big increase in soybeans.

If so, officials believe there may be a volume for export roughly comparable with this year. Stocks, however, will be down. Ending stocks are estimated at around 700 million pounds for all food fats—the smallest since 1951.

Export volume is expected to hold up pretty well, though Argentina will again be in a surplus position with its big crop of sunflower seed.

Total exports of cottonseed and soybean oils this marketing year are officially estimated at around 1.8 billion pounds. This is up 400 million pounds from a year ago. It includes the oil equivalent of soybeans shipped.

About two-thirds of the edible oils, not counting soybeans, will move out under government programs—either Public Law 480 or through the International Cooperation Administration.

Here is the estimate of prospective edible oil exports this season: Under P. L. 480, 610 million pounds; through ICA 65 million; regular commercial exports 400 million; oil equivalent of soybeans 725 million.

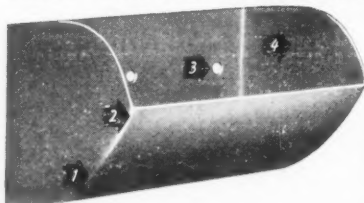
OLIVE OIL. Production of olive oil from the 1955 crop in the Mediterranean basin, including the Middle East and North Africa, is now estimated as the smallest since 1950.

The Foreign Agricultural Service estimates output this year at around 750,500 tons against a little more than 1 million tons last year.

This cut, plus smaller than usual beginning stocks, plus an uncertain outlook for 1956-crop olives, indicates a continued demand for U. S. vegetable oils through the balance of this year and into the next season.

Extent of the damage to the 1956 olive crop is not yet fully determined. However, all the indications point to another poor crop, due to the severe winter weather in France, Italy, Spain and Greece.

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Your jobber has them, or write **B. I. Weller Company,** 327 South LaSalle Street, Chicago 4, Illinois.

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(2) Scientifically formed lip aids in greater cup capacity.

(3) Bolt-hole placement gives better cup balance... saves belting.
(4) Hyperbolic sideboard ends permit greater load capacity without "slopping."

**CALUMET
CUPS**

A factor that is difficult for U. S. officials to assess is the effect of winter freezes on the larvae of the olive fly.

The fly causes a great deal of damage when infestation is widespread as it was this season. Severe winter weather, however, is supposed to kill the larvae and reduce this hazard.

Should this have occurred, part of the damage by freezing may have been offset by a reduction in damage of the insect. The answer won't be known until later in the season.

Oil Mill Meeting at Biloxi, Miss., June 6-8

NEWEST methods for extracting oil from soybeans and cottonseed will occupy members of the Tri-States Oil Mill Superintendents Association at its 31st convention, at Edgewater Gulf Hotel, Biloxi, Miss., June 6-7-8.



E. E. Kressenberg

W. E. Hassler, Buckeye Cotton Oil Co., Memphis, Tenn., program chairman, announces an agenda including:

"The Solvent Processing of Soybeans and Controlling the Products," Jack Tennent, superintendent, Galesburg Soy

Products Co., Galesburg, Ill.

"Recent Developments Relative to Oil Milling," Dr. E. A. Gastrop, Southern Regional Research Laboratory, New Orleans, La.

"Screw Press Operations," A. H. Burner, French Oil Mill Machinery Co., Piqua, Ohio.

"Expeller Operations," J. W. Dunning, V. D. Anderson Co., Cleveland, Ohio.

"Fire and Accident Prevention," R. H. Parrish, American Mutual Liability Insurance Co., New Orleans, La.

E. E. Kressenberg, Chickasaw Oil Mill, Memphis, Tenn., is president of the association. B. C. Lundy, Greenville Oil Works, Greenville, Miss., is again convention chairman. E. S. Lyle, Dyersburg Oil Mill, Dyersburg, Tenn., will be moderator for the program.

**On to
Urbana
in '56**

NSPA-ASA Meetings

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BINS FOR SURPLUS STORAGE. Overcome your lack of storage space with government-type grain bins, 18 x 16 feet, 3,250 bu. level full, approx. 3,500 bu. heaping full capacity. Write for attractive prices. Midwest Steel Products Co., Railway Exchange Bldg., Kansas City 6, Mo.

PERFORATED METAL—CAN supply round hole and slotted zinc material for all makes soybean cleaners. Pioneer Fanning Mill Co., 1328 North Second St., Minneapolis, Minn.

FOR SALE: ROANOKE, LEE, Jackson, Ogden, Clemson, JEW-45, Nanksoy, S-100, Woods Yellow, Black Wilson and other varieties select and certified seed soybeans. Also a complete line of field and pasture seeds. Gurley Milling Co., seed dept., phone 2303, Selma, N. C.

"20" ATTRITION MILL, MOTORS, starters. Terms. Write E. K. Tanner, Little Falls, Minn.

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- Sizes—10 to 21 ft.

Model "B" Hytrol

- Handles 150 lb. bags, boxes, cartons
- Elevates hydraulically to 45 degrees
- Ruff-Top belt, with or without cleats
- Reversible at flip of switch
- Sizes—10 to 22 ft.



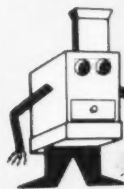
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IN THE MARKETS

FACTORY USE VEGETABLE OILS, for January and February. Reported by Bureau of the Census (1,000 lbs.)
Primary Materials: Factory Production and Consumption, and Factory and Warehouse Stocks, February 1955-January 1956

	Factory production		Factory consumption		Factory and warehouse stocks	
	Feb. 1956	Jan. 1956	Feb. 1956	Jan. 1956	Feb. 29 1956	Jan. 31 1956
Cottonseed, crude	211,401	231,041	195,888	189,248	180,058	192,347
Cottonseed, refined	182,780	174,915	147,672	123,015	1417,399	1415,964
Soybean, crude	271,253	270,046	269,118	258,148	128,177	137,246
Soybean, refined	249,371	239,846	249,526	238,205	81,159	81,682
Vegetable foots (100% basis)	24,041	22,192	15,052	12,787	52,278	50,455

Includes 61.9 million pounds of refined cottonseed oil reported by respondents to the Census Bureau as owned by Commodity Credit Corp. This figure, as well as the comparable Jan. 31, 1956, figure of 91 million pounds, includes quantities sold for export by CCC but not "lifted" but excludes quantities sold by CCC for export and being further processed. As of Feb. 29, 1956, CCC reported no quantities of refined cottonseed oil as being removed from inventory and put in an "in-transit position to other storage."

Factory Consumption of Vegetable Fats and Oils, By Uses, During February 1956

	Edible products			Inedible products			
	Shortening	Margarine	Other edible	Soap	Paint & varnish	Lubricants & similar oils ¹	Other inedible
Cottonseed, refined	19,060	5,186	2,337				414
Soybean, crude				55	331	10	2,441
Soybean, refined	45,340	6,803	7,709		7,198	18	7,467
Foots, vegetable, raw and acidulated (100% basis)				2,077	168	861	673
Hydrogenated vegetable oils, edible:							
Cottonseed	20,065	25,763					
Soybean	37,874	65,440	1,477				
Other	2,020	2,305	966				

¹Includes quantities consumed in lubricants, greases, cutting oils, dielectric oils, core oils, brake fluids, and metal working.
²Not shown to avoid disclosure of figures for individual companies.

Consumption of Primary Fats and Oils in Fat Splitting

	1955		1955	
	Feb.	Jan.	Jan.-Feb. Cumulative	Jan.-Feb. Cumulative
Vegetable				
Coconut, crude	4,224	4,645	8,869	3,131
Other vegetable	330	614	944	1,747
Total vegetable	4,554	5,259	9,813	4,878
Soapstocks				
Vegetable foots	10,693	8,504	19,197	7,621
Source: U. S. Census Bureau.				

EXPORTS. U. S. exports of soybeans and soybean oil for February. Preliminary data by Foreign Agricultural Service.

Soybean oil:	
Soybeans	2,642,951 bu.
Crude	5,298,271 lbs.
Refined but not further processed	6,998,029 lbs.
Refined, deodorized and hydrogenated	32,350,671 lbs.

Converted to a soybean equivalent basis the exports for February amounted to 6,924,179 bushels. This compares with 11,022,729 bushels exported in January, and 4,070,193 bushels exported in February 1955.

Soybeans: Inspections for overseas export by ports and country of destination Mar. 19-Apr. 13. Reported by Agricultural Marketing Service (1,000 bu.)

	Phila- delphia	Balti- more	New Norfolk	Orleans	Mobile	Port Allen	Total
Germany		37,333					37,333
Holland	28,000	18,667		579,447	234,181		860,295
Japan	26,134	18,424		108,266		101,592	254,416
Formosa						136,117	136,117
Korea				256,276			256,276
Belgium		97,066	33,032	210,973			341,071
Israel				359,883			359,883
Denmark		86,138		112,000			198,138
Finland		80,680					80,680
Norway		93,333					93,333
Total	228,147	257,628	33,032	1,626,845	234,181	237,709	2,617,542

SOYBEAN DIGEST

Soybeans: U. S. exports and prices
1954-55 1955-56
Price per bushel¹ Price per bushel¹

Period	Illinois country shipping points	U.S. No. 2, yellow, 3%, bulk, C.I.F., European ports	Exports Million bu.	Illinois country shipping points	U.S. No. 2, yellow, 3%, bulk, C.I.F., European ports	Exports Million bu.
October-December	2.62-2.73	3.16-3.35	27.2	2.19-2.27	2.80-2.91	34.3
January	2.74	3.35	5.3	2.35	2.99	6.5
February	2.74	3.35	3.8	2.45	3.02	2.8
March	2.63	3.16	3.2	2.55	3.18	
April-June	2.42-2.54	3.05-3.10	8.7			
July-September	2.24-2.39	2.78-2.99	11.9			

¹ Ranges are the high and low of the monthly averages for the period. U. S. Department of Agriculture.

Edible oil programs in 1955-56 under Title I, P.L. 480¹. Approximate quantities (Million lb.)

Country	Agreements signed	Purchase authori- zations issued	Country	Agreements signed	Purchase authori- zations issued
Peru	22	8	Iran	7	
Ecuador	10	10	Greece	442	442
Spain	275	143	Chile	79	
Israel	13	13	Turkey	322	
Argentina	175	175	Korea	116	
Colombia	8	8	Total	700	433
Italy	32	32			

¹ Under most of these agreements, lard could be bought instead of edible oils, but not much lard is likely to be taken. ² About 13 million is from an agreement signed last June. ³ Estimated. Quantity not stated in agreement. U. S. Department of Agriculture.

STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday and Saturday preceding date of report (1,000 bu.)

	Mar. 26	Apr. 3	Apr. 10
U. S. Soybeans in Store and Afloat at Domestic Markets			
Atlantic Coast	1,711	1,827	1,528
Gulf Coast	3,623	3,774	3,136
Northwestern and Upper Lake	5,281	5,250	5,207
Lower Lake	8,064	8,163	8,205
East Central	1,526	1,540	1,563
West Central, Southwestern & Western	1,977	1,984	1,885
Total current week	22,182	22,538	21,524
Total year ago	4,189	3,914	3,929
U. S. Soybeans in Store and Afloat at Canadian Markets			
Total current week	469	429	410
Total year ago	95	95	95
Total North American Commercial Soybean Stocks			
Current week	22,651	22,967	21,934
Year ago	4,284	4,009	4,024

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Mar. 23	Mar. 29	Apr. 6
Chicago	550	410	545
Duluth	13	4	7
Indianapolis	124	50	124
Kansas City	71	33	70
Minneapolis	155	136	260
Omaha	55	35	48
Peoria	109	37	102
Sioux City	25	11	23
St. Joseph	31	—	2
St. Louis	23	36	20
Toledo	120	79	117
Totals	1,276	831	1,318
Last week	1,276	1,276	831
Last year	601	536	443
Total Chicago soybean stocks	6,907	7,215	7,100

SHORTENING. Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., in pounds.

Mar. 24	3,557,289
Mar. 31	3,886,353
Apr. 7	4,076,490
Apr. 14	3,928,050

MAY, 1956

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SUPPLY AND DISTRIBUTION of the 1954-55 soybean crops, reported by Agricultural Marketing Service (1,000 bu.)

	1954-55	1955-56
Carryover ¹	1,336	9,957
Production	341,565	371,276
Total supply ²	342,901	381,233
Farm use including seed for season	26,000	27,000
Quantity remaining for processing, export, or carryover	316,901	354,233
Disappearance through Feb. 29 ³ :		
Crushed for oil or processed ⁴	106,374	123,624
Exported	36,592	43,566
Total	142,966	167,190
Balance on Mar. 1 for processing, export or carryover	173,935	187,043

¹ Stocks as of Oct. 1. ² Imports negligible. ³ October through February. ⁴ No allowance is made for new crop crushings prior to Oct. 1.

Soybeans, supply and disposition, crop year, 1950-55 (million bu.)

Item	Year beginning Oct. 1					
	1950	1951	1952	1953	1954	1955 ¹
Production	299.3	282.5	298.1	268.5	341.6	371.3
Total supply, Oct. 1	302.2	286.6	301.6	287.7	342.9	381.3
Less:						
Seed and feed ²	18.2	21.7	25.2	24.5	23.7	30
Crushings, Oct.-Feb.	114.6	114.4	106.1	102.0	106.4	123
Exports, Oct.-Feb.	14.2	10.8	19.7	29.8	36.3	44
Mar. 1, available supply	155.2	139.7	150.6	122.4	176.5	184
Crushings, Mar.-Sept.	137.4	129.9	128.3	111.2	142.6	157
Exports, Mar.-Sept.	13.6	6.2	12.2	9.7	23.8	21
Stocks, Sept. 30	4.2	3.6	10.1	1.3	10.0	6
October-September totals						
Crushings	252.0	244.3	234.4	213.2	249.0	280
Exports	27.8	17.0	31.9	39.5	60.1	65
Price per bushel	\$	\$	\$	\$	\$	\$
Support	2.06	2.45	2.56	2.56	2.22	2.04
Received by farmers	2.47	2.73	2.72	2.72	2.46	2.10

¹ October-February is partly estimated. Disposition through the rest of the crop year is forecast. ² Includes residual. ³ Preliminary. Agricultural Marketing Service.

Food fats and oils: Supply and disposition, 1950 to date. (Million lb.)

	Year beginning October						Forecast ¹
Item	1950	1951	1952	1953	1954	1955	1956
Stocks, Oct. 1							
Butter	234	114	111	323	489	295	150
Lard	82	57	143	42	50	75	100
Cottonseed oil	137	193	393	1,016	896	361	400
Soybean oil	113	171	194	174	127	180	
Others ²	40	57	39	33	45	51	50
Total	607	590	880	1,589	1,608	962	700
Imports	52	46	45	61	91	50	
Production							
Butter	1,472	1,389	1,599	1,677	1,576	1,625	
Lard	2,811	2,920	2,501	2,263	2,588	2,835	
Cottonseed oil ³	1,229	1,730	1,840	2,106	1,723	1,850	
Soybean oil ³	2,726	2,611	2,856	2,767	3,376	3,775	
Others ^{2, 3}	622	526	537	660	560	610	
Total	8,859	9,175	9,333	9,473	9,822	10,695	
Total supply	9,519	9,811	10,258	11,123	11,521	11,707	
Exports⁴							
Butter	42	3	14	45	190	150	
Lard	630	751	514	456	587	700	
Cottonseed oil ³	59	127	55	402	716		1,800
Soybean oil ³	762	437	413	488	714		
Others ^{2, 3}	92	62	39	119	33	35	
Adjustment ⁵	20	52	74	92	135	50	
Total	1,605	1,432	1,110	1,600	2,375	2,735	
Domestic use							
Butter	1,552	1,390	1,373	1,468	1,580	1,620	
Lard ⁶	2,203	2,078	2,104	1,791	1,966	2,110	
Cottonseed oil	1,115	1,404	1,162	1,824	1,543		3,965
Soybean oil	1,906	2,150	2,462	2,326	2,609		
Others ²	566	521	548	589	612	625	
Adjustment ⁵	20	-52	-74	-92	-135	-50	
Total ⁶	7,322	7,490	7,575	7,907	8,174	8,270	
Total use for food⁷	6,964	7,131	7,241	7,588	7,819	7,950	
Per capita, civilian and military							
Butter (fat content)	8.0	7.1	6.9	7.2	7.6	7.7	
Other	34.7	36.2	36.2	37.3	37.4	37.3	
Total (fat content)	42.7	43.3	43.1	44.5	45.0	45.0	

¹ Except for stocks on Oct. 1, 1955. ² Includes beef fats, peanut, corn, olive and sesame oils. ³ Includes oil equivalent of oilseeds exported for crushing. ⁴ Includes shipments. Butter, cottonseed oil and adjustments include quantities from CCC stocks that are

not reported in Census data. ⁵ Includes exports of processed food oils not classified by kind, shortening and other secondary fats. ⁶ Adjusted for estimated changes in stocks on farm. ⁷ Excludes food fats used for nonfood purposes but includes nonfood oils (mostly coconut, babassu and palm-kernel) used in food.

FARM STOCKS. Soybean stocks on farms Apr. 1 totaled 60 million bushels, according to the crop reporting board of Agricultural Marketing Service. These are the third highest Apr. 1 stocks of record but are little more than one-half of the record stocks on farms a year ago. The 10-year average for the same date is 42 million bushels.

Disappearance of soybeans from farms during the January-March quarter amounted to nearly 56 million bushels, higher than in any similar quarter since records began in 1943. Last year, disappearance for the same quarter amounted to only 35 million bushels.

Movement from farms has been speeded by the active demand at increased prices during the quarter, especially during recent weeks. Considerable quantities of soybeans placed under CCC loan have already been redeemed.

Soybean stocks on farms on Apr. 1 (1,000 bu.)

State	Average		State	Average	
	1945-54	1955		1945-54	1955
N. Y.	28	26	Md.	216	440
N. J.	84	137	Va.	390	522
Pa.	128	70	N. C.	810	614
Ohio	4,421	11,586	S. C.	168	318
Ind.	5,812	15,684	Ga.	64	81
Ill.	12,602	30,285	Fla.	14	24
Mich.	490	1,147	Ky.	307	410
Wis.	162	331	Tenn.	268	308
Minn.	3,315	16,072	Ala.	72	60
Iowa	8,098	21,900	Miss.	498	519
Mo.	2,506	7,987	Ark.	533	1,348
N. Dak.	58	296	La.	48	42
S. Dak.	202	1,401	Okla.	38	5
Nebr.	105	1,338	Texas		3
Kans.	514	710			
Del.	208	250	U. S.	42,153	113,914
					59,982

¹ Short-time average.

STOCKS. Soybean stocks of 176.5 billion bushels were reported in all storage positions on Apr. 1, according to reports assembled by the U. S. Department of Agriculture crop reporting board. These are the highest Apr. 1 stocks of record exceeding last year by only one-half million bushels.

From an estimated supply of 381 million bushels (carryover Oct. 1, 1955, of 10 million plus production of 371 million bushels), a disappearance of nearly 205 million bushels is indicated for the period Oct. 1 to Apr. 1. Known use for the one-half year includes 149 million bushels processed for oil as reported by the Bureau of the Census and about 45.4 million bushels exported. In addition, a considerable quantity of the 1955 crop soybeans was processed before Oct. 1 and a small quantity has been fed.

U. S. stocks of soybeans, Apr. 1, 1956, with comparisons (1,000 bu.)

Position	Reported by	Apr. 1			
		1954	1955	1956	1956
On farms	Crop Reporting Board	37,312	113,914	115,600	59,982
Terminals	Grain Division, AMS	11,461	3,914	20,988	22,193
Commodity	Commodity				
Credit Corp. ¹	Credit Corp.	36	0	3	0
Processing					
Plants	Bureau of Census	52,297	17,549	81,784	67,366
Int. Mills Elev.					
& Whses. ²	Crop Reporting Board	16,862	40,623	55,394	26,958
Total		117,968	176,000	273,769	176,499

¹ Owned by CCC, in transit or stored in their own bins. ² All off-farm storage not otherwise designated.

Stocks of soybeans, by states, Apr. 1, 1955 and 1956 (1,000 bu.)

State	Off-farm total		All positions	
	Apr. 1 1955	Apr. 1 1956	Apr. 1 1955	Apr. 1 1956
Ohio	6,211	10,757	17,797	16,287
Ind.	3,953	7,404	19,637	15,252
Ill.	18,603	38,487	48,888	52,558
Minn.	8,493	11,995	24,565	21,497
Iowa	13,547	16,694	35,447	25,257
Mo.	2,578	6,115	10,565	10,333
Nebr.	570	274	1,908	544
Kans.	266	1,128	976	1,638
N. C.	184	116	798	1,179
*Other	7,681	23,547	15,419	31,972
U. S.	62,086	116,517	176,000	176,499

*Other states and unallocated to avoid disclosing individual operations.

PROCESSING OPERATIONS. Reported by Bureau of the Census for February and March.

Primary products except crude oil at crude oil mill locations: production, shipments and transfers, and stocks, March 1956

	Production		Shipments and transfers		Stocks end of month	
	March 1956	Feb. 1956	March 1956	Feb. 1956	Mar. 31 1956	Feb. 29 1956
Soybean:						
Cake and meal	584,396	563,223	543,904	525,660	177,979	137,487
Flour	11,875	9,820	11,616	9,921	2,380	2,121
Lecithin	1,475	*1,344	(NA)	(NA)	1,683	*1,807

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, March 1956 - February 1956 (2,000 lbs.)

State	Net receipts at mills		Crushed or used		Stocks at mills	
	March 1956	Feb. 1956	March 1956	Feb. 1956	Mar. 31 1956	Feb. 29 1956
U. S.	656,107	648,171	760,953	735,841	2,020,983	2,125,829
Illinois	258,133	246,092	286,853	286,980	702,872	731,592
Indiana	44,701	48,140	83,576	68,912	182,468	221,343
Iowa	128,882	151,520	124,561	122,253	271,838	267,517
Kansas	1	1	1	1	1	1
Kentucky	9,321	11,077	16,475	16,552	1	1
Minnesota	67,454	59,242	50,383	49,346	66,364	49,293
Missouri	20,629	25,297	26,952	25,463	95,680	101,403
Nebraska	1	1	1	1	1	1
North Carolina	1	947	4,007	3,687	1	11,529
Ohio	63,023	53,793	80,740	75,693	229,371	247,088
Texas	1	1	1	1	1	1
All other	63,964	52,063	87,406	86,955	472,590	496,064

Soybean products: Production and stocks at oil mill locations, by states, March 1956 - February 1956

State	Production		Stocks	
	March 1956	February 1956	Mar. 31 1956	Feb. 29 1956
U. S.	281,442	271,253	57,348	53,450
Illinois	108,409	108,792	17,832	15,934
Indiana	30,990	25,159	6,847	4,497
Iowa	46,400	45,629	8,649	8,415
Kansas	1	1	1	838
Kentucky	6,040	6,022	441	877
Minnesota	18,708	18,295	5,843	7,351
Missouri	9,854	9,260	2,953	2,297
Nebraska	1	1	1	1
N. Carolina	1,211	1,093	398	476
Ohio	29,054	27,295	4,775	4,050
All other	30,776	29,703	9,610	8,715

Cake and meal (tons)

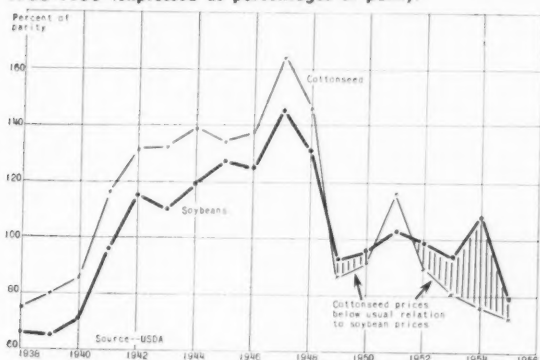
State	Production		Stocks	
	March 1956	February 1956	Mar. 31 1956	Feb. 29 1956
U. S.	584,396	563,223	177,979	137,487
Illinois	210,865	210,469	64,148	50,934
Indiana	65,762	54,127	47,137	28,077
Iowa	99,423	97,373	30,059	25,087
Kansas	1	1	1	1
Kentucky	12,820	12,839	548	867
Minnesota	38,540	37,504	1,097	2,324
Missouri	21,454	20,280	2,133	2,410
Nebraska	1	1	1	1
N. Carolina	3,067	2,961	6,009	4,374
Ohio	63,971	60,322	3,127	2,531
All other	68,494	67,348	23,721	20,883

* Revised. (NA) Not available. † Included in "All other" to avoid disclosure of figures for individual companies.

INSPECTIONS. Soybeans, inspected by grades and percent, as reported by Agricultural Marketing Service.¹

Grade	Oct. Mar. 1954-55		Oct. Mar. 1955-56		1955		1956		1956 ²	
	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.
No. 1	22,595	15	44,537	21	2,188	20	6,187	29	5,678	29
No. 2	77,141	50	104,277	49	6,682	59	10,301	49	9,856	50
No. 3	38,112	25	42,367	20	1,683	15	3,057	14	2,714	14
No. 4	10,643	7	15,547	8	483	4	1,180	6	1,075	5
Sample	4,994	3	4,705	2	261	2	484	2	376	2
Total	153,485	100	211,433	100	11,297	100	21,209	100	19,699	100

Relation Between Farm Prices of Cottonseed and Soybeans 1938-1955 (expressed as percentages of parity)



MAY, 1956

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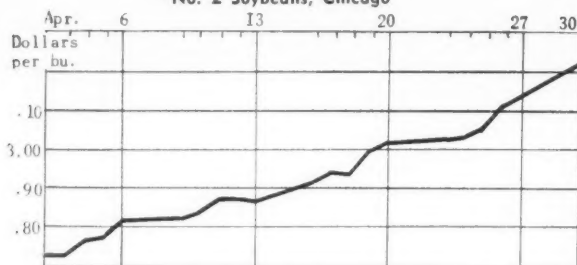
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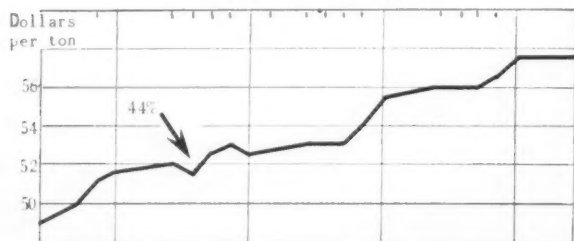
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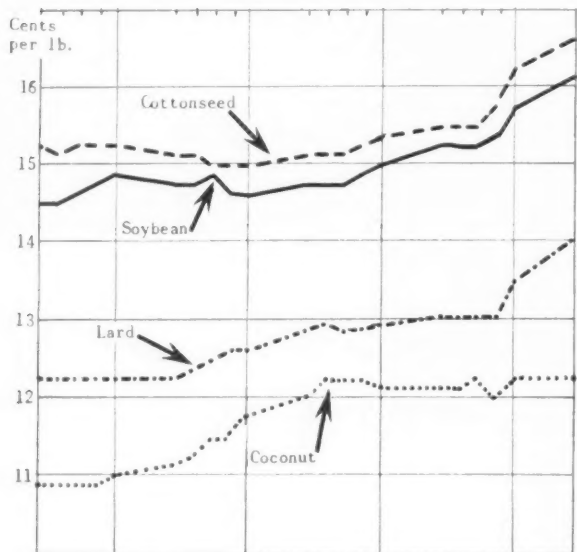
No. 2 Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Vegetable Oils and Lard



April Markets

MEAL, oil and soybeans all made a sharp rise during April. Both soybeans and soybean oil reached new highs for the season, and meal sold above the year-earlier price at month's end for the first time this year.

Major market factors were:

1—Small country offerings. U. S. Department of Agriculture reported only 60 million bushels on the farm Apr. 1 as compared with 113 million a year ago. This left only a small volume to market after this spring's plantings are taken care of. The belief was growing that the year's end carryover will be quite small.

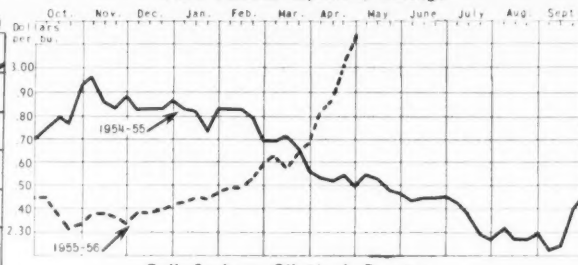
2—The continued heavy rate of processor operations—the crush continued at about 25 million bushels per month and this rate was expected to last through April.

3—The accelerated rate of meal consumption and greater meal exports than last year indicated a modest carryover of meal at the end of the season.

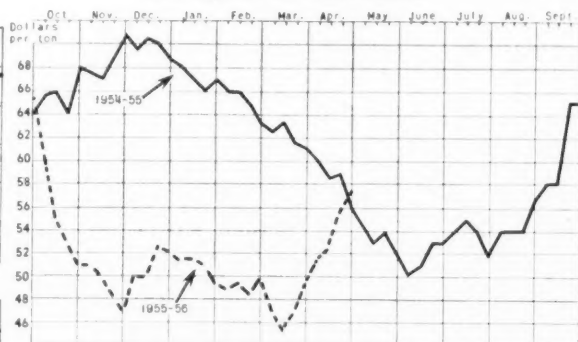
4—Processors reported a poor conversion ratio at the present price of beans, which forced them to hold up prices for meal and oil.

TRENDS AT A GLANCE (Weekly Close)

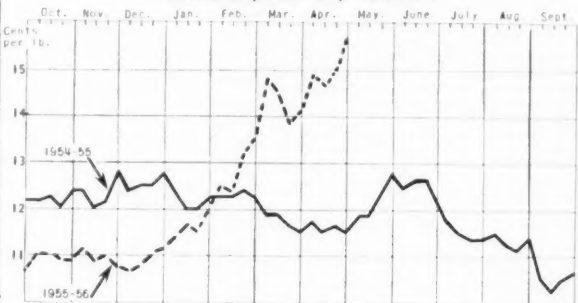
Near Futures Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



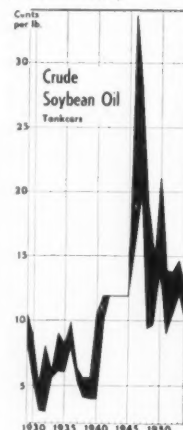
Crude Soybean Oil, Tankcars



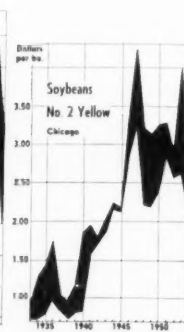
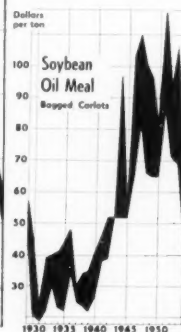
Export trade in soybeans was at a slower rate than earlier in the year.

The President's veto of the Farm Bill was expected to encourage increase of soybean acreage, but this was offset by the announced \$1.25 support on free corn, which will encourage more corn acres.

BY PRODUCTS. The price for soybean fatty acids remained at 15 $\frac{1}{4}$ c during April. Acid soybean soap stocks opened and closed the month at 67 $\frac{1}{2}$ c, with a dip of $\frac{1}{8}$ c in mid-month. Raw soybean soap stocks dropped from 27 $\frac{1}{2}$ c to 23 $\frac{1}{4}$ c.



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